

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.96
Test oil : ISO 4113
Part no. : 0 460 426 249
Pump designation : VE6/12F1250R498-6

Customer-spec. information
Customer : CUMMINS
Motor : 6 BTAA 5.9B
Power KW : 133.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 109

Opening pressure
bar : 207
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

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Plunger stroke mm : 1,4
Tolerance mm : +-0,02
Outlet : D

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure
hPa : 1000
Setting mm : 1.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1000
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 86.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 6.0

Check tolerance
cm³/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 7.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1380
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 68.5
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000

SV travel mm : 2.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 750

Aneroid pressure
hPa : 1000

SV travel mm : 0.7
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 450

SV travel mm : 2.4
Tolerance mm : 0.5

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000

Supply pump
pressure bar : 7.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 1000

Supply pump
pressure bar : 5.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000

Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2

Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 83.3
 Tolerance
 ccm/10s : 27.7

Check tolerance
 ccm/10s : 27.7
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1380
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 68.5
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1465
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 27.5
 Check tolerance
 cm³/1000S. : 10.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1530
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Aneroid pressure
 hPa : 500
 Del. quantity
 cm³/1000 strokes : 78.5
 Tolerance
 cm³/1000 strokes : 0.5

Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 85.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 88.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 850
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 86.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 410
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 240
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
MS1 dimension mm : 1,3
Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 34,8..38,8

Control lever
position YB mm : 41,7..48,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.11.95
Test oil : ISO 4113

Part no. : 0 460 494 390
Pump designation : VE4/9F2100R508-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M710 HT19.D
Power KW : 66.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting hPa : 4.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 52.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 40.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 4.5
Tolerance
cm3/1000 strokes : 1.0

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
SV travel mm : 5.4
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 152.7
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 111.1
 Tolerance
 ccm/10s : 22.2

 Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2400
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 26.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 450

LDA/
 HBA stroke mm : 6.7
 Del. quantity
 cm³/1000 strokes : 47.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 2.5

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Shutoff solenoid
 Volt : 12

 Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 51.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 41.0
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 54.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 52.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 1.5

Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

RESIDUAL QUANTITY

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 5.5
Tolerance
cm3/1000 strokes : 1.5
Shutoff solenoid
Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -12.0
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 19.5
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 38.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 220
Del. quantity
cm3/1000 strokes : 70.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.7
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,5
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,8
Tolerance mm : $\pm 0,2$

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 1,85

MICROSWITCH SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.04.95
Test oil : ISO 4113

Part no. : 0 460 494 408
Pump designation : VE4/9F2100R508-2

Customer-spec. information

Customer : FIAT-AUTO
Motor : M710 HT19.D
Power KW : 66.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting hPa : 4.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 4.5
Tolerance
cm³/1000 strokes : 1.0

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 26.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
SV travel mm : 5.2
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 22.2

 Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2400
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 26.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 15.0
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 450

LDA/
 HBA stroke mm : 6.7
 Del. quantity
 cm³/1000 strokes : 47.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 2.5

Shutoff solenoid
 Volt : 12

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 51.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 41.0
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 55.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 52.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 1.5

Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

RESIDUAL QUANTITY

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 1.5
Shutoff solenoid
Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 7.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -12.0
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 19.5
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 220
Del. quantity
cm³/1000 strokes : 65.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.7
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,5
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 1,85

MICROSWITCH SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.95
Test oil : ISO 4113
Part no. : 0 460 404 077
Pump designation : VE4/10F2100R518

Customer-spec. information
Customer : IVECO-SOFIM
Motor : 8140.67.2200

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2
Tolerance mm : 0,02
Check
tolerance mm : 0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.0
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -22.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.5
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1800

SV travel mm : 6.9
Tolerance mm : 0.3
Check
tolerance mm : 0.7

Shutoff solenoid
Volt : 12

Rated speed rpm : 1150

SV travel mm : 2.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100

SV travel mm : 7.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 400

OVERFLOW QUANTITY

Rated speed rpm : 2100
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
Del. quantity
cm³/1000 strokes : 7.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2600
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000s. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000s. : 2.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

IDLE DELIVERY

Rated speed rpm : 465
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm³/1000 strokes : -23.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.5
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 1.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
Dimension KF mm : 5,8
Tolerance mm : +0,2
Dimension MS mm : 1,8
Tolerance mm : +0,1
KSB travel mm : 11,5

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 2,31

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9
Control lever
position YB mm : 41,8..47,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 18.07.95
Test oil : ISO 4113
Part no. : 0 460 404 084
Pump designation : VE4/10F2100R518-1

Customer-spec. information
Customer : IVECO-SOFIM
Motor : 8140.67.2200

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

(as of UT) mm : 0,2
Tolerance mm : +-0,02
Check
tolerance mm : +-0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.0
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 43.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Del. quantity
cm3/1000 strokes : 29.0
Tolerance
cm3/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -22.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.5
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1800
SV travel mm : 6.9
Tolerance mm : 0.3
Check
tolerance mm : 0.7

Shutoff solenoid
Volt : 12

Rated speed rpm : 1150

SV travel mm : 2.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100

SV travel mm : 7.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 400

OVERFLOW QUANTITY

Rated speed rpm : 2100
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
Del. quantity
cm3/1000 strokes : 29.0
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2600
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Del. quantity
cm3/1000 strokes : 44.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 43.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 373
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 465
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm³/1000 strokes : -23.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.5
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 1.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
Dimension KF mm : 5,8
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,8
Tolerance mm : $\pm 0,2$
KSB travel mm : 11,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 41,8..47,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.07.95
Test oil : ISO 4113

Part no. : 0 460 414 112
Pump designation : VE4/11F1900R521-1

Customer-spec. information
Customer : IVECO-SOFIM
Motor : 8140.27.2560

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Setting mm : 3.2
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Setting hPa : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 47.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 26.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 10.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : -22.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : -0.8

Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1750
Aneroid pressure
hPa : 1200
SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1200

SV travel mm : 1.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200

SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 9.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3

Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2300
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 450

LDA/
HBA stroke mm : 5.8
Del. quantity
cm³/1000 strokes : 41.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1750
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 47.0
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 5.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 47.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 425
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : -24.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.8
Dimension K mm : K1
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,4
Tolerance mm : $+0,15/-0,1$
KSB travel mm : 7,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 44,1..49,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.11.95
Test oil : ISO 4113

Part no. : 0 460 414 134
Pump designation : VE4/11F1900R521-2

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.27.2585
Power KW : 76.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Setting mm : 3.4
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1750
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 51.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2050
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1200
Del. quantity
cm³/1000 strokes : -8.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1200
SV travel mm : 5.1
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

SV travel mm : 1.6
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200

SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1200

Supply pump
 pressure bar : 3.7
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1900
 Aneroid pressure
 hPa : 1200
 Overflow quantity
 ccm/10s : 152.7
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1200
 Overflow quantity
 ccm/10s : 111.1
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2050
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 40.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s. : 4.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 21.0
 Check tolerance
 cm³/1000s. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2300

Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 800
 Aneroid pressure
 hPa : 500

LDA/
 HBA stroke mm : 4.7
 Del. quantity
 cm³/1000 strokes : 42.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1900
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 50.0
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000s. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 800
 Del. quantity
 cm³/1000 strokes : 30.0
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000s. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 50.5
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000s. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 54.0
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 5.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1750
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 51.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 250

Del. quantity
 cm³/1000 strokes : 35.0
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : -12.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : -1.0
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 4.7
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 8,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,5
Tolerance mm : $+0,15/0,1$
KSB travel mm : 7,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,9..40,9

Control lever
position YB mm : 44,5..49,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.10.95
Test oil : ISO 4113

Part no. : 0 460 414 122
Pump designation : VE4/11F1900R522-2

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.27.3700
Power KW : 76.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Setting mm : 3.4
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Setting hPa : 6.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1750
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 51.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2050
Pressure hPa : 1200
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1200
Del. quantity
cm3/1000 strokes : -8.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200

Del. quantity
cm3/1000 strokes : -1.0
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1200
SV travel mm : 5.1
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200

SV travel mm : 1.6
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200

SV travel mm : 5.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1200

Supply pump
pressure bar : 3.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Overflow quantity
ccm/10s : 152.7
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Overflow quantity
ccm/10s : 111.1
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2050
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 21.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2300

Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 500

LDA/
HBA stroke mm : 4.7
Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 54.0
 Tolerance
 cm3/1000 strokes : 4.5
 Check tolerance
 cm3/1000S. : 5.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1750
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 51.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 300
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 300
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 250

Del. quantity
 cm3/1000 strokes : 35.0
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : -12.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : -1.0
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 4.7
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : -
MS1 dimension mm : 1,4
Tolerance mm : $+0,15/-0,1$
KSB travel mm : 10,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,9..40,9

Control lever
position YB mm : 44,5..49,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.03.95
Test oil : ISO 4113

Part no. : 0 460 484 067
Pump designation : VE4/8F2300R537

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 HT 17.D
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000

Setting mm : 4.1
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000

Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000

Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Spread

cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 28.5
Tolerance

cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance

cm³/1000S. : 2.5

KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 Spread
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
 Pressure hPa : 1000
 Del. quantity
 cm3/1000 strokes : 30.5
 Tolerance
 cm3/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm3/1000 strokes : 47.0
 Tolerance
 cm3/1000 strokes : 12.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 1000

Aneroid pressure
 hPa : 1000
 SV travel mm : 1.4
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 400
 Aneroid pressure
 hPa : 1000
 SV travel mm : 1.5
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 SV travel mm : 3.0
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 SV travel mm : 8.2
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 7.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 750
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 30.5
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2700
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm³/1000 strokes : 10.5
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2900
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.1
 Del. quantity
 cm³/1000 strokes : 35.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 41.5
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 30.5
 Tolerance
 cm³/1000 strokes : 1.5

Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 40.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 1500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 41.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0
 KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 550
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 23.0
 Tolerance
 cm3/1000 strokes : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 20.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 24.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 300
 Del. quantity
 cm3/1000 strokes : 47.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.1
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 3,32

MICROSWITCH
SET

: ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 43,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.95
Test oil : ISO 4113
Part no. : 0 460 484 083
Pump designation : VE4/8F2300R537-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 HT 17.D
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000

Setting mm : 4.4
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000

Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 41.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000s. : 2.5
Shutoff solenoid Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity cm³/1000 strokes : 31.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000s. : 2.5

KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 10.0
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 Spread
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000s. : 2.5
 KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
 Pressure hPa : 1000
 Del. quantity
 cm³/1000 strokes : 32.5
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 47.0
 Tolerance
 cm³/1000 strokes : 12.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 1000

Aneroid pressure
 hPa : 1000
 SV travel mm : 1.5
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 450
 Aneroid pressure
 hPa : 1000
 SV travel mm : 1.5
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 SV travel mm : 3.0
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 SV travel mm : 7.8
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 8.1
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 750
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 32.5
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2700
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm³/1000 strokes : 12.5
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2900
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 1.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.1
 Del. quantity
 cm³/1000 strokes : 39.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 2.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm³/1000 strokes : 40.5
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000s. : 2.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 31.5
 Tolerance
 cm³/1000 strokes : 1.5

Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 41.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 1500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 41.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

 KSB/AFB Volt : 12

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 550
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 21.0
 Tolerance
 cm3/1000 strokes : 2.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 20.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 24.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 300

Del. quantity
cm³/1000 strokes : 47.0

Tolerance
cm³/1000 strokes : 10.0

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 5.1

Dimension K mm : 3,3

Tolerance mm : $\pm 0,1$

Dimension KF mm : 5,4

Tolerance mm : $\pm 0,2$

Dimension MS mm : 1,4

Tolerance mm : $\pm 0,2$

POTENTIOMETER

SET

1. measurement

voltage Volt : 1=3,32 V

MICROSWITCH

SET

: 1=ARF 12,0

CONTROL LEVER POSITION

SET

Control lever

position YA mm : 37,2..39,2

Control lever

position YB mm : 43,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.02.95
Test oil : ISO 4113

Part no. : 0 460 484 068
Pump designation : VE4/8F2300R538

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 HT 17.L
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 4.1
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 41.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 28.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 2.5

KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 12.0
 Tolerance
 cm3/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 Spread
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000s. : 2.5
 KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
 Pressure hPa : 1000
 Del. quantity
 cm3/1000 strokes : 30.5
 Tolerance
 cm3/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm3/1000 strokes : 47.0
 Tolerance
 cm3/1000 strokes : 12.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 1000

Aneroid pressure
 hPa : 1000
 SV travel mm : 1.4
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 400
 Aneroid pressure
 hPa : 1000
 SV travel mm : 1.5
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 SV travel mm : 3.0
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 SV travel mm : 8.2
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 7.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 750
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 30.5
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2700
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm3/1000 strokes : 10.5
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2900
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.1
 Del. quantity
 cm3/1000 strokes : 35.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 41.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Del. quantity
 cm3/1000 strokes : 30.5
 Tolerance
 cm3/1000 strokes : 1.5

Check tolerance cm ³ /1000S.	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm	:	750
Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	40.5
Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance cm ³ /1000S.	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm	:	1500
Aneroid pressure hPa	:	1000
Del. quantity cm ³ /1000 strokes	:	41.5
Tolerance cm ³ /1000 strokes	:	0.5
Check tolerance cm ³ /1000S.	:	2.0
Shutoff solenoid Volt	:	12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	:	450
Del. quantity cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance cm ³ /1000S.	:	1.5
Spread cm ³ /1000 strokes	:	5.0
KSB/AFB Volt	:	12

IDLE DELIVERY

Rated speed rpm	:	550
Del. quantity cm ³ /1000 strokes	:	1.5
Tolerance cm ³ /1000 strokes	:	1.5
Check tolerance cm ³ /1000S.	:	1.5

Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm	:	400
Del. quantity cm ³ /1000 strokes	:	23.0
Tolerance cm ³ /1000 strokes	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

START TRANSITION

Rated speed rpm	:	600
Del. quantity cm ³ /1000 strokes	:	24.0
Tolerance cm ³ /1000 strokes	:	10.0
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

Rated speed rpm	:	300
Del. quantity cm ³ /1000 strokes	:	47.0
Tolerance cm ³ /1000 strokes	:	10.0
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/	
HBA stroke mm	: 5.1
Dimension K mm	: 3,3
Tolerance mm	: +0,1
Dimension KF mm	: 5,4
Tolerance mm	: +0,2
Dimension MS mm	: 1,4
Tolerance mm	: +0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 43,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.08.95
Test oil : ISO 4113
Part no. : 0 460 484 084
Pump designation : VE4/8F2300R538-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M708 NT 17.L
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.4
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 41.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000s. : 2.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000s. : 2.5
KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 10.0
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 Spread
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 2.5
 KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
 Pressure hPa : 1000
 Del. quantity
 cm³/1000 strokes : 32.5
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 47.0
 Tolerance
 cm³/1000 strokes : 12.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12
 Rated speed rpm : 1000

Aneroid pressure
 hPa : 1000
 SV travel mm : 1.5
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 450
 Aneroid pressure
 hPa : 1000
 SV travel mm : 1.5
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 SV travel mm : 3.0
 Tolerance mm : 1.0
 Check
 tolerance mm : 1.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 SV travel mm : 7.8
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 8.1
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 750
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 32.5
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2700
 Aneroid pressure
 hPa : 1000

Del. quantity
 cm³/1000 strokes : 12.5
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2900
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.1
 Del. quantity
 cm³/1000 strokes : 39.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 40.5
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 31.5
 Tolerance
 cm³/1000 strokes : 1.5

Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 41.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 1500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 41.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

 KSB/AFB Volt : 12

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0

Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 550
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 21.0
 Tolerance
 cm3/1000 strokes : 2.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 24.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

Rated speed rpm : 300
 Del. quantity
 cm3/1000 strokes : 47.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.1
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 43,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 06.06.94
Test oil : ISO 4113

Part no. : 0 460 424 099
Pump designation : VE4/12F1400R539

Customer-spec. information
Customer : NISSAN-MISA
Motor : B 4.40 II

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 109

Opening pressure
bar : 207
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Outlet : A

INJECTION PUMP SETTING VALUES

C02

TIMING DEVICE TRAVEL

Rated speed rpm : 1100
Setting mm : 1.4
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Setting hPa : 7.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 840
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 74.0
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 0.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Spread
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1575

Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 125.0
Tolerance
cm³/1000 strokes : 30.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1300

SV travel mm : 2.9
Tolerance mm : 0.3
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000

SV travel mm : 0.7
Tolerance mm : 0.3
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 1400

SV travel mm : 3.4
Tolerance mm : 0.3
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1400
Supply pump
pressure bar : 8.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000

Rated speed rpm : 500
Supply pump
pressure bar : 4.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 1400
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1575
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1525
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000s. : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1700
Del. quantity
cm³/1000 strokes : 1.5

Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1400
Del. quantity
cm3/1000 strokes : 76.0
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 75.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.5
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 1400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5

Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 430
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 130
Del. quantity
cm3/1000 strokes : 125.0
Tolerance
cm3/1000 strokes : 30.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,1
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 52,7..60,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.06.95

Test oil : ISO 4113

Part no. : 0 460 414 120

Pump designation : VE4/11F1900R542-1

Customer-spec. information

Customer : IVECO-SOFIM

Motor : 8140.47.2200

TEST BENCH REQUIREMENTS

Calibrating-oil
return

temperature °C : 45

Tolerance °C : 1

Overflow

restriction mm : 0.75

Inlet press. bar : 0.35

Tolerance bar : 0.05

Test nozzle holde
assembly

: 1 688 901 027

Opening pressure
bar

: 250

Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

Setting mm : 1.8

Tolerance mm : 0.1

Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200

Aneroid pressure

hPa : 1000

Setting hPa : 6.0

Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1400

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 56.0

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 4.5

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550

Del. quantity

cm3/1000 strokes : 27.0

Tolerance

cm3/1000 strokes : 0.5

Shutoff solenoid

Volt : 12

Check tolerance

cm3/1000s. : 4.5

IDLE SETTING

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 17.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

Spread

cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : -26.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.8

Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1000

SV travel mm : 4.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000

SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.1
Tolerance hPa : 0.3

Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 111.1
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 16.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2280
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 400

LDA/
HBA stroke mm : 6.2
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 700

Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 57.0
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 5.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 56.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -28.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Tolerance mm : 0.2
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.2
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 8,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,7
Tolerance mm : $+0,15/-0,1$
KSB travel mm : 5,7

CONTROL LEVER POSITION SET

Control lever
position YA mm : 33,0..35,0

Control lever
position YB mm : 48,9..54,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.07.95
Test oil : ISO 4113

Part no. : 0 460 414 128
Pump designation : VE4/11F1900R542-2

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.47.2200
Power KW : 83.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Setting mm : 1.8
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 56.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 27.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 17.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : -26.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1000
SV travel mm : 4.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000

SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Supply pump
pressure bar : 4.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 111.1
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 18.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2280

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 400

LDA/
HBA stroke mm : 6.2
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5

Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 57.0
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 5.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 56.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 325
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -28.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Tolerance mm : 0.2
Check
tolerance mm : 0.4

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.2
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 8,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,6
Tolerance mm : $+0,15/-0,1$
KSB travel mm : 5,7

CONTROL LEVER POSITION SET

Control lever
position YA mm : 33,0..35,0

Control lever
position YB mm : 48,9..54,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.02.95
Test oil : ISO 4113

Part no. : 0 460 494 400
Pump designation : VE4/9F2100R547-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M 721 CT 19.S
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 6.0
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 46.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 41.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 2.5

KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -10.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -0.9
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000

SV travel mm : 2.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000

SV travel mm : 4.0
Tolerance mm : 0.8
Check
tolerance mm : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 SV travel mm : 6.0
 Tolerance mm : 1.5
 Check
 tolerance mm : 2.0
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 7.8
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 800
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 600
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 138.8
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 34.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2650
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 3.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2450
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 17.0
 Tolerance
 cm3/1000 strokes : 4.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.2
 Del. quantity
 cm3/1000 strokes : 46.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.5

Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm	:	2100
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes	:	46.5
Tolerance cm3/1000 strokes	:	1.5
Check tolerance cm3/1000S.	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm	:	900
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes	:	48.5
Tolerance cm3/1000 strokes	:	1.5
Check tolerance cm3/1000S.	:	2.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12
Rated speed rpm	:	1500
Aneroid pressure hPa	:	1000
Del. quantity cm3/1000 strokes	:	46.0
Tolerance cm3/1000 strokes	:	0.5
Check tolerance cm3/1000S.	:	2.0
Shutoff solenoid Volt	:	12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm	:	450
Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 strokes	:	1.5
Check tolerance cm3/1000S.	:	1.5
Spread cm3/1000 strokes	:	5.0

KSB/AFB Volt	:	12
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RESIDUAL QUANTITY

Rated speed rpm	:	550
Del. quantity cm3/1000 strokes	:	7.0
Tolerance cm3/1000 strokes	:	1.5
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	-14.0
Tolerance cm3/1000 strokes	:	4.0
Check tolerance cm3/1000S.	:	4.0
Shutoff solenoid Volt	:	12
KSB/AFB Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	-0.9
Tolerance cm3/1000 strokes	:	0.1
Check tolerance cm3/1000S.	:	0.1
Shutoff solenoid Volt	:	12

KSB/AFB Volt	:	12
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DELIVERY DIFFERENCE

Rated speed rpm	:	1500
Del. quantity cm3/1000 strokes	:	1.5
Tolerance cm3/1000 strokes	:	1.5

Check tolerance
cm3/1000s. : 1.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 40.0
Tolerance
cm3/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 220
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 13.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.2
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,1$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 36,6..45,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.08.94
Test oil : ISO 4113

Part no. : 0 460 494 349
Pump designation : VE4/9F2100R548

Customer-spec. information

Customer : FIAT-AUTO
Motor : M705 VT19.0
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 6.0
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 41.5
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 2.5
KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -10.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -0.9
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000

SV travel mm : 2.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000

SV travel mm : 4.0
Tolerance mm : 0.8
Check
tolerance mm : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 SV travel mm : 6.0
 Tolerance mm : 1.5
 Check
 tolerance mm : 2.0
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 7.8
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 800
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 600
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 22.2
 Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 138.8
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 34.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2650
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 3.5
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2450
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.2
 Del. quantity
 cm³/1000 strokes : 46.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.5

Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 2100
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 46.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 2.5
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 900
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 48.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 2.5
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 1500
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 46.0
Tolerance	
cm3/1000 strokes	: 0.5
Check tolerance	
cm3/1000S.	: 2.0
Shutoff solenoid	
Volt	: 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm	: 450
Del. quantity	
cm3/1000 strokes	: 1.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 1.5
Spread	
cm3/1000 strokes	: 5.0

KSB/AFB Volt	: 12
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RESIDUAL QUANTITY

Rated speed rpm	: 550
Del. quantity	
cm3/1000 strokes	: 7.0
Tolerance	
cm3/1000 strokes	: 1.5
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	: 1500
Del. quantity	
cm3/1000 strokes	: -14.0
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 4.0
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	: 1500
Del. quantity	
cm3/1000 strokes	: -0.9
Tolerance	
cm3/1000 strokes	: 0.1
Check tolerance	
cm3/1000S.	: 0.1
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12

DELIVERY DIFFERENCE

Rated speed rpm	: 1500
Del. quantity	
cm3/1000 strokes	: 1.5
Tolerance	
cm3/1000 strokes	: 1.5

Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 220
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 13.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.2
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,2
Tolerance mm : +0,2

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 0,8

MICROSWITCH SET

mm : ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 36,6..45,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.02.95
Test oil : ISO 4113
Part no. : 0 460 494 402
Pump designation : VE4/9F2100R548-1

Customer-spec. information
Customer : FIAT-AUTO
Motor : M721 CT19.N
Power KW : 60.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 6.0
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 46.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 41.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 2.5
KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 34.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500

Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.9
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000

SV travel mm : 2.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000

SV travel mm : 4.0
Tolerance mm : 0.8
Check
tolerance mm : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 SV travel mm : 6.0
 Tolerance mm : 1.5
 Check
 tolerance mm : 2.0
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 7.8
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 800
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 600
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 22.2
 Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 138.8
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 34.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 2650
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 3.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 2450
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 17.0
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000s. : 5.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.2
 Del. quantity
 cm³/1000 strokes : 46.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 2.5

Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 2100
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 46.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 2.5
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 900
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 48.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 2.5
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 1500
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 46.0
Tolerance	
cm3/1000 strokes	: 0.5
Check tolerance	
cm3/1000S.	: 2.0
Shutoff solenoid	
Volt	: 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm	: 450
Del. quantity	
cm3/1000 strokes	: 1.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 1.5
Spread	
cm3/1000 strokes	: 5.0

KSB/AFB Volt	: 12
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RESIDUAL QUANTITY

Rated speed rpm	: 550
Del. quantity	
cm3/1000 strokes	: 7.0
Tolerance	
cm3/1000 strokes	: 1.5
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm	: 1500
Del. quantity	
cm3/1000 strokes	: -14.0
Tolerance	
cm3/1000 strokes	: 4.0
Check tolerance	
cm3/1000S.	: 4.0
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	: 1500
Del. quantity	
cm3/1000 strokes	: -0.9
Tolerance	
cm3/1000 strokes	: 0.1
Check tolerance	
cm3/1000S.	: 0.1
Shutoff solenoid	
Volt	: 12

KSB/AFB Volt	: 12
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DELIVERY DIFFERENCE

Rated speed rpm	: 1500
Del. quantity	
cm3/1000 strokes	: 1.5
Tolerance	
cm3/1000 strokes	: 1.5

Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3

Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 20.0
Tolerance

cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.5

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity

cm³/1000 strokes : 40.0
Tolerance

cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 220

Del. quantity
cm³/1000 strokes : 65.0
Tolerance

cm³/1000 strokes : 13.0
Shutoff solenoid

Volt : 12

KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

D02

LDA/
HBA stroke mm : 5.2
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,2
Tolerance mm : +0,2

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 1,85

MICROSWITCH SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.03.95
Test oil : ISO 4113

Part no. : 0 460 494 401
Pump designation : VE4/9F2300R549-1

Customer-spec. information

Customer : FIAT-AUTO
Motor : M721 CA 19.S
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.9
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 5.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 530
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2475
Del. quantity
cm3/1000 strokes : 22.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -8.5
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2300
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 800

SV travel mm : 3.0
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 500

SV travel mm : 4.4
Tolerance mm : 0.8
Check
tolerance mm : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000

SV travel mm : 5.0
Tolerance mm : 1.5
Check
tolerance mm : 2.0
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2300
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 800
Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2300
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2475
Del. quantity
cm3/1000 strokes : 22.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2700
Del. quantity
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2900
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

D05

KSB/AFB Volt : 12

Rated speed rpm : 2300
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : 1.3
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 32.7
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 30.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5

Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

HOUSING-FIXED IDLE SPRING
HIGH IDLE

Rated speed rpm : 530
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

RESIDUAL QUANTITY

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 4.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -13.0
Tolerance
cm3/1000 strokes : 4.0

Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : -0.7
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Tolerance mm : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 130
Del. quantity
cm3/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12
KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,5
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,5
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,2..39,2

Control lever
position YB mm : 41,1..49,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.96
Test oil : ISO 4113
Part no. : 0 460 426 241
Pump designation : VE6/12F1250R556-1

Customer-spec. information
Customer : PERKINS
Motor : Q20 Phaser 195Ti

TEST BENCH REQUIREMENTS

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,25
Tolerance mm : $\pm 0,02$
Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Setting mm : 2.0
Tolerance mm : 0.1
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Setting hPa : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 900
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 95.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 24
Check tolerance
cm³/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 280
Del. quantity
cm³/1000 strokes : 11.0

Tolerance
 cm3/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 24
 Spread
 cm3/1000 strokes : 6.5
 Check tolerance
 cm3/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1400
 Pressure hPa : 1500
 Del. quantity
 cm3/1000 strokes : 45.0
 Tolerance
 cm3/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm3/1000 strokes : 160.0
 Tolerance
 cm3/1000 strokes : 30.0
 Shutoff solenoid
 Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1500

SV travel mm : 2.7
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1500

SV travel mm : 1.1
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500

SV travel mm : 3.3
 Tolerance mm : 0.4
 Shutoff solenoid
 Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500
 Supply pump
 pressure bar : 8.5
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1500
 Supply pump
 pressure bar : 6.4
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1500
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1400

Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 1350
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 15.0
Check tolerance
cm³/1000S. : 15.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 1480
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 700
Aneroid pressure
hPa : 700
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 104.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 700

Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 900
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 95.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 24

MECHANICAL SHUTOFF

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 24

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 280
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 280
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 24

START TRANSITION

Rated speed rpm : 230
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 130
Del. quantity
cm3/1000 strokes : 160.0
Tolerance
cm3/1000 strokes : 30.0
Shutoff solenoid
Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,36
Tolerance mm : $+0,15/-0,1$
KSB travel mm : 8,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..38,2

Control lever
position YB mm : 44,9..53,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.07.95
Test oil : ISO 4113

Part no. : 0 460 426 230
Pump designation : VE6/12F1350R561

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8060.45.4385

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Setting mm : 2.7
Tolerance mm : 0.1
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Setting hPa : 8.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 48.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 24
Check tolerance
cm3/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 24
Spread
cm3/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 5.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1500
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

SV travel mm : 3.8
Tolerance mm : 0.3
Shutoff solenoid
Volt : 24

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

SV travel mm : 1.5
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000

SV travel mm : 4.9
Tolerance mm : 0.3

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 9.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 24

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 111.1
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 40.0

Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1450
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 53.0
 Tolerance
 cm3/1000 strokes : 8.0
 Check tolerance
 cm3/1000S. : 10.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1600
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 600
 Aneroid pressure
 hPa : 400
 Del. quantity
 cm3/1000 strokes : 60.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1350
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 59.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 61.0

Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 68.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 65.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 350
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 425
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 375
 Del. quantity
 cm³/1000 strokes : 5.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 24

START TRANSITION

Rated speed rpm : 250
 Del. quantity
 cm³/1000 strokes : 40.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 130
 Del. quantity
 cm³/1000 strokes : 85.0
 Tolerance
 cm³/1000 strokes : 25.0
 Shutoff solenoid
 Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,6
 Tolerance mm : $\pm 0,1$
 Dimension KF mm : 6,0
 Tolerance mm : $\pm 0,2$
 MS1 dimension mm : 1,6
 Tolerance mm : $\pm 0,15/0,1$
 KSB travel mm : 10,0

CONTROL LEVER POSITION SET

Control lever
 position YA mm : 37,9..39,9

Control lever
 position YB mm : 42,5..47,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.01.96
Test oil : ISO 4113

Part no. : 0 460 424 101
Pump designation : VE4/12F1200R568

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 01
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Setting mm : 2.2
Tolerance mm : 0.2

KSB/AFB Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Setting hPa : 6.7
Tolerance hPa : 0.3

KSB/AFB Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.5

KSB/AFB Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 4.5

KSB/AFB Volt : 24

IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 2.0
Spread
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 6.5

KSB/AFB Volt : 24

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1300
Pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 3.0

KSB/AFB Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : 30.0

KSB/AFB Volt : 24

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 1.0

KSB/AFB Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

SV travel mm : 4.0
Tolerance mm : 0.4
Check
tolerance mm : 0.7

KSB/AFB Volt : 24

Rated speed rpm : 750
Aneroid pressure
hPa : 1500

SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7

KSB/AFB Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500

SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.4

KSB/AFB Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3

KSB/AFB Volt : 24

Rated speed rpm : 550
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 5.2
Tolerance hPa : 0.3

KSB/AFB Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 550
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2

KSB/AFB Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6

KSB/AFB Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1300
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 3.0

KSB/AFB Volt : 24

Rated speed rpm : 1340
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 12.0

KSB/AFB Volt : 24

Rated speed rpm : 1260
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 100.0
Check tolerance
cm³/1000S. : 5.0

KSB/AFB Volt : 24

Rated speed rpm : 137
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

KSB/AFB Volt : 24

Rated speed rpm : 550
Aneroid pressure hPa : 400

LDA/
HBA stroke mm : 7.6
Del. quantity
cm³/1000 strokes : 81.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5

KSB/AFB Volt : 24

Rated speed rpm : 1200
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 103.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

KSB/AFB Volt : 24

Rated speed rpm : 700
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 112.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 5.5

KSB/AFB Volt : 24

Rated speed rpm : 850
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

KSB/AFB Volt : 24

Rated speed rpm : 550
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 6.0

KSB/AFB Volt : 24

Rated speed rpm : 1000
Aneroid pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 108.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5

MECHANICAL SHUTOFF

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0
KSB/AFB Volt : 24

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
KSB/AFB Volt : 24

START TRANSITION

Rated speed rpm : 430
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : 20.0
KSB/AFB Volt : 24

Rated speed rpm : 330
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : 15.0
KSB/AFB Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/

HBA stroke mm : 7.6
Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,5
Tolerance mm : $+0,15/-0,1$
KSB travel mm : 7,1

MICROSWITCH

SET

mm : GST 71,9

CONTROL LEVER POSITION

SET

Control lever
position YA mm : 37,4..40,4

Control lever
position YB mm : 35,4..40,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.95
Test oil : ISO 4113

Part no. : 0 460 494 353
Pump designation : VE4/9F2250R571

Customer-spec. information

Customer : OPEL
Motor : 1,7 DT-LC
Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 4.2
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting hPa : 6.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 33.3
Tolerance
cm3/1000 strokes : 0.5

Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000s. : 2.5

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance
cm3/1000s. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 4.5

Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2550
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : 24.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 44.0
Tolerance
cm3/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 44.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1000
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : -9.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1000

Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.6
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

SV travel mm : 1.7
Tolerance mm : 0.3
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 400
Aneroid pressure
hPa : 1000

SV travel mm : 1.8
Tolerance mm : 1.0

Check
tolerance mm : 1.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000

SV travel mm : 3.0
Tolerance mm : 1.0
Check
tolerance mm : 1.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 5.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 200

Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2550
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2725
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 7.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2950
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 2.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 2.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : 1.3

Check tolerance	
cm3/1000S.	: 2.3
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 500
Del. quantity	
cm3/1000 strokes	: 31.0
Tolerance	
cm3/1000 strokes	: 2.5
Check tolerance	
cm3/1000S.	: 3.0
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 1800
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 36.2
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 2.3
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 700
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 31.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 3.0
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 1200
Aneroid pressure	
hPa	: 1000
Del. quantity	
cm3/1000 strokes	: 33.3
Tolerance	
cm3/1000 strokes	: 0.5
Check tolerance	
cm3/1000S.	: 2.3
Shutoff solenoid	
Volt	: 12
Rated speed rpm	: 700

Aneroid pressure	
hPa	: 50
Tolerance	
cm3/1000 strokes	: 0.5
Check tolerance	
cm3/1000S.	: 0.5
Check tolerance	
cm3/1000S.	: 0.5
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12
Rated speed rpm	: 700
Aneroid pressure	
hPa	: 170
Del. quantity	
cm3/1000 strokes	: 2.4
Check tolerance	
cm3/1000S.	: 1.0
Shutoff solenoid	
Volt	: 12
KSB/AFB Volt	: 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm	: 485
Del. quantity	
cm3/1000 strokes	: 1.5
Tolerance	
cm3/1000 strokes	: 1.5
Check tolerance	
cm3/1000S.	: 1.5
Spread	
cm3/1000 strokes	: 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	: 485
Del. quantity	
cm3/1000 strokes	: 1.5
Tolerance	
cm3/1000 strokes	: 1.5
Spread	
cm3/1000 strokes	: 5.0
Check tolerance	
cm3/1000S.	: 1.5
Spread	
cm3/1000 strokes	: 5.0

IDLE DELIVERY

Rated speed rpm : 485
 Del. quantity
 cm3/1000 strokes : 9.0
 Tolerance
 cm3/1000 strokes : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : -11.0
 Tolerance
 cm3/1000 strokes : 4.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : -0.6
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 6.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 1.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.4
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 16.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 32.0
 Tolerance
 cm3/1000 strokes : 5.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 250
 Del. quantity
 cm3/1000 strokes : 50.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3

Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 0,9
Tolerance mm : $\pm 0,2$

MICROSWITCH
SET

mm : ARF12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 24,2..26,2

Control lever
position YB mm : 53,0..63,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.11.95
Test oil : ISO 4113

Part no. : 0 460 494 372
Pump designation : VE4/9F2250R571-1

Customer-spec. information
Customer : OPEL
Motor : 1,7 DTL
Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting mm : 4.2
Tolerance mm : 0.1

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Setting hPa : 6.4
Tolerance hPa : 0.3

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 33.3

Tolerance
cm³/1000 strokes : 0.5

Spread
cm³/1000 strokes : 2.5

Check tolerance
cm³/1000s. : 2.5

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance
cm³/1000s. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 4.5

Tolerance
cm³/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2550
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 44.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1000
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : -9.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1000

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.6
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

SV travel mm : 1.7
Tolerance mm : 0.3
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 400
Aneroid pressure
hPa : 1000

SV travel mm : 1.8
Tolerance mm : 1.0

Check
tolerance mm : 1.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000

SV travel mm : 3.0
Tolerance mm : 1.0
Check
tolerance mm : 1.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 5.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2550
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2725
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 7.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2950
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 2.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 36.5
Tolerance
cm³/1000 strokes : 1.3

Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 1800
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 36.2
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 33.3
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

 Rated speed rpm : 700

Aneroid pressure
 hPa : 50
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 0.5
 Check tolerance
 cm3/1000S. : 0.5
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

 Rated speed rpm : 700
 Aneroid pressure
 hPa : 170
 Del. quantity
 cm3/1000 strokes : 2.4
 Check tolerance
 cm3/1000S. : 1.0
 Shutoff solenoid
 Volt : 12

 KSB/AFB Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 485
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 485
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 485
 Del. quantity
 cm³/1000 strokes : 9.0
 Tolerance
 cm³/1000 strokes : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : -11.0
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : -0.6
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 6.0
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 1.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.4
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 32.0
 Tolerance
 cm³/1000 strokes : 5.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

Rated speed rpm : 250
 Del. quantity
 cm³/1000 strokes : 50.0
 Tolerance
 cm³/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12
 KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3

Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 0,9
Tolerance mm : $\pm 0,2$

MICROSWITCH
SET

: ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 24,2..26,2

Control lever
position YB mm : 53,0..61,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.01.96
Test oil : ISO 4113

Part no. : 0 460 424 104
Pump designation : VE4/12F1200R572

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 01
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure
hPa : 1200

Setting mm : 2.6
Tolerance mm : 0.2

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1200

Setting hPa : 6.7
Tolerance hPa : 0.3

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 108.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.5

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 61.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 4.5

KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 2.0
Spread
cm3/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 6.5

KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1300

Pressure hPa : 1200

Del. quantity
cm³/1000 strokes : 70.0

Tolerance
cm³/1000 strokes : 3.0

KSB/AFB Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 130.0

Tolerance
cm³/1000 strokes : 30.0

KSB/AFB Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 45.0

Tolerance
cm³/1000 strokes : 1.0

KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 950
Aneroid pressure
hPa : 1200

SV travel mm : 3.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7

KSB/AFB Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 1200

SV travel mm : 1.4
Tolerance mm : 0.4

Check
tolerance mm : 0.7

KSB/AFB Volt : 12

Rated speed rpm : 1200

Aneroid pressure
hPa : 1200

SV travel mm : 4.8
Tolerance mm : 0.4

Check
tolerance mm : 0.4

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1200

Aneroid pressure
hPa : 1200

Supply pump
pressure bar : 8.4
Tolerance hPa : 0.3

KSB/AFB Volt : 12

Rated speed rpm : 550

Aneroid pressure
hPa : 1200

Supply pump
pressure bar : 5.2
Tolerance hPa : 0.3

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 550

Overflow quantity
ccm/10s : 63.8

Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2

KSB/AFB Volt : 12

Rated speed rpm : 1200

Aneroid pressure
hPa : 1200

Overflow quantity
ccm/10s : 97.2

Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1300
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 8.5

KSB/AFB Volt : 12

Rated speed rpm : 1400
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 7.5
Check tolerance
cm³/1000S. : 7.5

KSB/AFB Volt : 12

Rated speed rpm : 1450
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

KSB/AFB Volt : 12

Rated speed rpm : 1350
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 20.0
Check tolerance
cm³/1000S. : 20.0

KSB/AFB Volt : 12

Rated speed rpm : 550
Aneroid pressure
hPa : 400
Del. quantity
cm³/1000 strokes : 84.0

Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5

KSB/AFB Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 103.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

KSB/AFB Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 112.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

KSB/AFB Volt : 12

Rated speed rpm : 850
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

KSB/AFB Volt : 12

Rated speed rpm : 550
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000S. : 6.0

KSB/AFB Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 108.0

Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5

MECHANICAL SHUTOFF

Rated speed rpm : 1200
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 370
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 20.0
KSB/AFB Volt : 12

Rated speed rpm : 270
Del. quantity
cm3/1000 strokes : 95.0
Tolerance
cm3/1000 strokes : 15.0
KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

E07

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,5
Tolerance mm : $\pm 0,15/-0,1$
KSB travel mm : 7,1

MICROSWITCH SET

mm : GST 71,9

CONTROL LEVER POSITION SET

Control Lever
position YA mm : 37,4..40,4

Control Lever
position YB mm : 36,9..42,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 17.10.95
Test oil : ISO 4113

Part no. : 0 460 414 109
Pump designation : VE4/11F2000R573

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.07.3700

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

E08

Rated speed rpm : 1600
Setting mm : 2.9
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1100
Setting hPa : 6.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1100
Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 48.0
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : 0.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.5
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 12.5
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2200
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1800
SV travel mm : 3.9
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
SV travel mm : 0.7
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 550
SV travel mm : 2.5
Tolerance mm : 1.2
Check
tolerance mm : 1.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 2000
SV travel mm : 4.5
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 8.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 4.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 550
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.5
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 500
Overflow quantity
ccm/10s : 111.1
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 55.5

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
 Del. quantity
 cm³/1000 strokes : 41.0
 Tolerance
 cm³/1000 strokes : 4.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2350
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Aneroid pressure
 hPa :

LDA/
 HBA stroke mm : 9.0

Rated speed rpm : 2000
 Del. quantity
 cm³/1000 strokes : 47.0
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1500
 Del. quantity
 cm³/1000 strokes : 51.5
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 33.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

E10

Rated speed rpm : 350
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 325
 Del. quantity
 cm³/1000 strokes : 24.0
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

START TRANSITION

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 25.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 300
 Del. quantity
 cm³/1000 strokes : 75.0

Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 9.0
Dimension K mm : 3,5
Tolerance mm : $\pm 0,1$
Dimension KF mm : 8,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,5
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,8..40,9

Control lever
position YB mm : 44,4..49,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.01.96
Test oil : ISO 4113
Part no. : 0 460 426 233
Pump designation : VE6/12F1100R579

Customer-spec. information
Customer : FNH-GEOTECH
Motor : 7.5 L NA/DI

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Tolerance mm : +0,2
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 600
Setting mm : 1.6
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 600
Setting hPa : 5.5
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 66.5
Del. quantity
cm3/1000 strokes : 69.5
Tolerance
cm3/1000 strokes : 0.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 5.0
Spread
cm3/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 5.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1180
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 750

SV travel mm : 2.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 500

SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100

SV travel mm : 2.5
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1100
Supply pump
pressure bar : 7.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 475
Supply pump
pressure bar : 4.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1100
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 475
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1180
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1260
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Aneroid pressure
 hPa :

LDA/
 HBA stroke mm : 5.0

Rated speed rpm : 1100
 Del. quantity
 cm3/1000 strokes : 66.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 56.0
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 475
 Del. quantity
 cm3/1000 strokes : 53.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 800
 Del. quantity
 cm3/1000 strokes : 69.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5

IDLE DELIVERY

Rated speed rpm : 460
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

START TRANSITION

Rated speed rpm : 440
 Del. quantity
 cm3/1000 strokes : 60.0
 Tolerance
 cm3/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 250
 Del. quantity
 cm3/1000 strokes : 115.0
 Tolerance
 cm3/1000 strokes : 25.0
 Shutoff solenoid
 Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.0
Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 32,8..34,8

Control lever
position YB mm : 39,6..46,2

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.01.96
Test oil : ISO 4113
Part no. : 0 460 426 238
Pump designation : VE6/12F1100R579-1

Customer-spec. information
Customer : FNH-GEOTECH
Motor : 7.5 L TC

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test Lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,0
Tolerance mm : +0,2
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800
Setting mm : 1.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Setting hPa : 6.2
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 600
Rated speed rpm : 1050
Del. quantity
cm3/1000 strokes : 61.5
Del. quantity
cm3/1000 strokes : 62.0
Tolerance
cm3/1000 strokes : 0.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 5.0
Spread
cm3/1000 strokes : 5.0
Shutoff solenoid
Volt : 12
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 5.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1180
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 95.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 900

SV travel mm : 1.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 600

SV travel mm : 0.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100

SV travel mm : 2.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1100
Supply pump
pressure bar : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 475
Supply pump
pressure bar : 4.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1100
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 475
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1180
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1260
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1100
 Del. quantity
 cm3/1000 strokes : 59.5
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 53.0
 Tolerance
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 800
 Del. quantity
 cm3/1000 strokes : 67.5
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 475
 Del. quantity
 cm3/1000 strokes : 53.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 4.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1050
 Del. quantity
 cm3/1000 strokes : 62.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

START TRANSITION

Rated speed rpm : 350
 Del. quantity
 cm3/1000 strokes : 80.0
 Tolerance
 cm3/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 200
 Del. quantity
 cm3/1000 strokes : 120.0
 Tolerance
 cm3/1000 strokes : 25.0
 Shutoff solenoid
 Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
 Tolerance mm : +0,1
 Dimension KF mm : 6,4
 Tolerance mm : +0,2
 Dimension MS mm : 1,4
 Tolerance mm : +0,2

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 32,8..34,8

Control lever
position YB mm : 39,7..46,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.04.95
Test oil : ISO 4113

Part no. : 0 460 416 078
Pump designation : VE6/11F1150R586

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8065.05.240
Power KW : 83.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 55
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 027

Opening pressure bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800
Setting mm : 2.4
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Setting hPa : 6.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700
Del. quantity cm3/1000 strokes : 64.0
Tolerance cm3/1000 strokes : 0.5
Spread cm3/1000 strokes : 3.5
Shutoff solenoid Volt : 12

IDLE SETTING

Rated speed rpm : 300
Del. quantity cm3/1000 strokes : 12.0
Tolerance cm3/1000 strokes : 2.0
Shutoff solenoid Volt : 12
Spread cm3/1000 strokes : 3.5
Check tolerance cm3/1000S. : 4.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1250
Del. quantity cm3/1000 strokes : 25.0
Tolerance cm3/1000 strokes : 3.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 100.0

Tolerance
cm³/1000 strokes : 30.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 700

SV travel mm : 1.4
Tolerance mm : 0.4
Check
tolerance mm : 0.9
Shutoff solenoid
Volt : 12

Rated speed rpm : 1150

SV travel mm : 3.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1150
Supply pump
pressure bar : 8.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 5.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1150
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1270
Del. quantity
cm³/1000 strokes : 16.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1150
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 62.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 700

Del. quantity
cm3/1000 strokes : 64.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 60.0

Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 150
Del. quantity
cm3/1000 strokes : 105.0
Tolerance
cm3/1000 strokes : 30.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 36,5..38,5

Control lever
position YB mm : 43,7..48,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.95
Test oil : ISO 4113

Part no. : 0 460 484 073
Pump designation : VE4/8F2050R588

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 640
Power KW : 40.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 33.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 27.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 5.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
SV travel mm : 1.0
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
SV travel mm : 2.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 8.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 97.2

Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2150
Del. quantity
cm³/1000 strokes : 27.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm³/1000 strokes : 16.0
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000s. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750

Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 33.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5

Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : -

Control lever
position YB mm : -

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.12.95
Test oil : ISO 4113

Part no. : 0 460 484 086
Pump designation : VE4/8F2050R588-1

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 640
Power KW : 47.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500

Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500

Setting hPa : 6.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 33.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 27.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 5.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
SV travel mm : 1.0
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
SV travel mm : 2.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 8.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 97.2

Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2150
Del. quantity
cm³/1000 strokes : 27.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm³/1000 strokes : 16.0
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000s. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750

Del. quantity
cm3/1000 strokes : 34.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 33.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5

Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm3/1000 strokes : 60.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 16,0..20,0
Control lever
position YB mm : 65,9..77,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.01.96
Test oil : ISO 4113

Part no. : 0 460 404 081
Pump designation : VE4/10F2100R589

Customer-spec. information
Customer : IVECO-SOFIM
Motor : 8140.67.2550
Power KW : 56.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

F01

(as of UT) mm : 0,2
Tolerance mm : 0,02
Check
tolerance mm : 0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Setting mm : 2.1
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Setting hPa : 6.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 42.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2400
Del. quantity
cm3/1000 strokes : 16.0
Tolerance
cm3/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -14.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1800
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100

SV travel mm : 7.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1600

SV travel mm : 4.8
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Supply pump
pressure bar : 8.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2100
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2400
 Del. quantity
 cm3/1000 strokes : 16.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2300
 Del. quantity
 cm3/1000 strokes : 32.0
 Tolerance
 cm3/1000 strokes : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2600
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2100
 Del. quantity
 cm3/1000 strokes : 40.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1500
 Del. quantity
 cm3/1000 strokes : 41.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 37.5
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1200

Del. quantity
 cm3/1000 strokes : 42.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 490
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1200

Del. quantity
cm3/1000 strokes : -18.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 35.0

Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
Dimension KF mm : 5,8
Tolerance mm : +0,2
Dimension MS mm : 1,8
Tolerance mm : +0,2
KSB travel mm : 10,0
TLA travel mm : 9,0

MICROSWITCH SET

mm : 0,8...3,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 42,8..44,8

Control lever
position YB mm : 60,8..69,2

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.95
Test oil : ISO 4113
Part no. : 0 460 404 082
Pump designation : VE4/10F2050R591

Customer-spec. information
Customer : IVECO-SOFIM
Motor : 8140.67.2560
Power KW : 56.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Prestroke

F05

(as of UT) mm : 0,2
Tolerance mm : 0,02
Check
tolerance mm : 0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Setting mm : 2.2
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Setting hPa : 6.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 42.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 14.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000s. : 2.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Del. quantity
cm3/1000 strokes : 25.0

Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -14.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1800
Tolerance mm : 0.3
Check
tolerance mm : 0.7

Shutoff solenoid
Volt : 12

Rated speed rpm : 2100

SV travel mm : 7.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1600

SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 4.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2100
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
 Del. quantity
 cm3/1000 strokes : 25.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2400
 Del. quantity
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2600
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2100
 Del. quantity
 cm3/1000 strokes : 40.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1500
 Del. quantity
 cm3/1000 strokes : 42.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 38.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1200

Del. quantity
 cm3/1000 strokes : 42.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 465
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : -18.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 35.0

Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : -
Dimension KF mm : 5,8
Tolerance mm : +0,2
Dimension MS mm : 1,8
Tolerance mm : +0,2
KSB travel mm : 10,0
TLA travel mm : 9,0

MICROSWITCH SET

mm : 0,8...3,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 42,9..44,9

Control lever
position YB mm : 36,0..44,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.10.94
Test oil : ISO 4113

Part no. : 0 460 494 368
Pump designation : VE4/9F2200R603

Customer-spec. information
Customer : VW
Motor : 1,9 L UD MVEG 2
Power KW : 55.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 147
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

F09

Plunger stroke mm : 0,8
Tolerance mm : +0,02
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 750

Setting mm : 5.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750

Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Del. quantity
cm3/1000 strokes : 46.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2525
Pressure hPa : 750
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 750
Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 750

SV travel mm : 3.4
Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 750

SV travel mm : 0.8
Tolerance mm : 0.4

Shutoff solenoid
Volt : 12

Timing device
solenoid Volt : 100

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 750
Supply pump
pressure bar : 8.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 750
Supply pump
pressure bar : 4.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Overflow quantity
ccm/10s : 77.7
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Aneroid pressure
hPa : 750
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2525
Aneroid pressure
hPa : 750

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 34.5
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2750
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 46.2
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
volt : 12

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 44.7
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 46.5

Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 180
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 0.5
Check tolerance
cm³/1000S. : 0.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 300
Del. quantity
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.05.95
Test oil : ISO 4113

Part no. : 0 460 494 413
Pump designation : VE4/9F2200R603-1

Customer-spec. information

Customer : VW
Motor : 1,9 L UD MVEG 2
Power KW : 55.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 147
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Setting mm : 5.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Del. quantity
cm3/1000 strokes : 46.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2525
Pressure hPa : 750

Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 750
Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 750

SV travel mm : 3.4
Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 750

SV travel mm : 0.8
Tolerance mm : 0.4
Shutoff solenoid
Volt : 12

Timing device
solenoid Volt : 100

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 750
Supply pump
pressure bar : 8.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 750
Supply pump
pressure bar : 4.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Overflow quantity
ccm/10s : 77.7
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Aneroid pressure
hPa : 750
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2525
Aneroid pressure
hPa : 750
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm3/1000 strokes : 34.5
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2750
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2100
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm3/1000 strokes : 46.2
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 44.7
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm3/1000 strokes : 46.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 700

Aneroid pressure
 hPa : 180
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 0.5
 Check tolerance
 cm3/1000S. : 0.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 700
 Aneroid pressure
 hPa : 300
 Del. quantity
 cm3/1000 strokes : 6.0
 Check tolerance
 cm3/1000S. : 1.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

START TRANSITION

Rated speed rpm : 380

Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,0..40,0

Control lever
position YB mm : 48,6..58,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.06.95
Test oil : ISO 4113

Part no. : 0 460 494 416
Pump designation : VE4/9F2200R604-1

Customer-spec. information

Customer : VW
Motor : 1,9 L UD MVEG 2
Power KW : 55.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 111

Opening pressure
bar : 147
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Setting mm : 5.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Setting hPa : 5.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 750
Del. quantity
cm3/1000 strokes : 46.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 8.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2525
Pressure hPa : 750

Del. quantity	
cm ³ /1000 strokes :	20.0
Tolerance	
cm ³ /1000 strokes :	2.0
Shutoff solenoid	
Volt :	12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm :	100
Del. quantity	
cm ³ /1000 strokes :	43.0
Tolerance	
cm ³ /1000 strokes :	3.0
Shutoff solenoid	
Volt :	12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm :	2000
Aneroid pressure	
hPa :	750

SV travel mm :	8.6
Tolerance mm :	0.4
Check	
tolerance mm :	0.8
Shutoff solenoid	
Volt :	12

Rated speed rpm :	750
Aneroid pressure	
hPa :	750

SV travel mm :	3.4
Tolerance mm :	0.4
Check	
tolerance mm :	0.8
Shutoff solenoid	
Volt :	12

Rated speed rpm :	2000
Aneroid pressure	
hPa :	750

SV travel mm :	0.8
Tolerance mm :	0.4
Shutoff solenoid	
Volt :	12

Timing device	
solenoid Volt :	100

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm :	2000
Aneroid pressure	
hPa :	750
Supply pump	
pressure bar :	8.0
Tolerance hPa :	0.3
Shutoff solenoid	
Volt :	12

Rated speed rpm :	750
Aneroid pressure	
hPa :	750
Supply pump	
pressure bar :	4.3
Tolerance hPa :	0.3
Shutoff solenoid	
Volt :	12

OVERFLOW QUANTITY

Rated speed rpm :	1250
Aneroid pressure	
hPa :	750
Overflow quantity	
ccm/10s :	77.7
Tolerance	
ccm/10s :	22.2

Check tolerance	
ccm/10s :	34.7
Shutoff solenoid	
Volt :	12

Rated speed rpm :	2100
Aneroid pressure	
hPa :	750
Overflow quantity	
ccm/10s :	97.2
Tolerance	
ccm/10s :	41.6

Check tolerance	
ccm/10s :	55.5
Shutoff solenoid	
Volt :	12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm :	2525
Aneroid pressure	
hPa :	750
Del. quantity	
cm ³ /1000 strokes :	20.0
Tolerance	
cm ³ /1000 strokes :	2.0
Check tolerance	
cm ³ /1000s. :	4.0

Shutoff solenoid
 Volt : 12
 Rated speed rpm : 2400
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm³/1000 strokes : 34.5
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 2750
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 2100
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm³/1000 strokes : 46.2
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.2
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 44.7
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.5
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 1250
 Aneroid pressure
 hPa : 750
 Del. quantity
 cm³/1000 strokes : 46.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 700
 Aneroid pressure
 hPa : 180
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 0.5
 Check tolerance
 cm³/1000S. : 0.5
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 700
 Aneroid pressure
 hPa : 300
 Del. quantity
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 1.0
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 41.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 36,0..40,0

Control lever
position YB mm : 48,6..58,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.01.96
Test oil : ISO 4113

Part no. : 0 460 426 243
Pump designation : VE6/12F1100R620

Customer-spec. information
Customer : CASE
Motor : 6T 590

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Prestroke

F21

(as of UT) mm : 0,3
Tolerance mm : $\pm 0,02$
Check
tolerance mm : $\pm 0,04$

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 750
Setting mm : 2.6
Tolerance mm : 0.2
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 750
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 4.0
Shutoff solenoid
Volt : 24

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 24
Spread
cm³/1000 strokes : 9.0
Check tolerance
cm³/1000s. : 9.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1140
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 3.0

Shutoff solenoid
Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 30.0
Shutoff solenoid
Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1000
SV travel mm : 4.4
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1000
Supply pump
pressure bar : 6.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

Rated speed rpm : 500
Supply pump
pressure bar : 4.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 1100
Overflow quantity
ccm/10s : 83.3
Tolerance
ccm/10s : 27.7

Check tolerance
ccm/10s : 27.7
Shutoff solenoid
Volt : 24

Rated speed rpm : 500

Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1140
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 6.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 1175
Del. quantity
cm³/1000 strokes : 30.0
Check tolerance
cm³/1000s. : 15.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 1240
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 1100
Del. quantity
cm³/1000 strokes : 61.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 3.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 35.0
Tolerance
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 61.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 24

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 520
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 425
Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 strokes : 3.5

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 78.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 150
Del. quantity
cm3/1000 strokes : 100.0
Tolerance
cm3/1000 strokes : 30.0
Shutoff solenoid
Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 5,2
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,36
Tolerance mm : $+0,15/-0,1$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 34,8..38,8

Control lever
position YB mm : 39,9..45,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.95
Test oil : ISO 4113

Part no. : 0 460 484 081
Pump designation : VE4/8F2400R622

Customer-spec. information

Customer : FORD
Motor : 1,8 l IDI
Power KW : 44.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,85
Tolerance mm : $\pm 0,05$
Outlet : 8

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 0.2
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm3/1000 strokes : 60.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1200
 Del. quantity
 cm3/1000 strokes : -9.4
 Tolerance
 cm3/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1200
 Del. quantity
 cm3/1000 strokes : -0.2
 Tolerance
 cm3/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
 Del. quantity
 cm3/1000 strokes : -0.8
 Tolerance
 cm3/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2400
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.8
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 800
 SV travel mm : 1.5

Tolerance mm : 0.4
 Check
 tolerance mm : 0.8
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 400
 SV travel mm : 2.4
 Tolerance mm : 0.1
 Check
 tolerance mm : 1.0
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1000
 SV travel mm : 4.4
 Tolerance mm : 1.2
 Check
 tolerance mm : 1.3
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2400
 Supply pump
 pressure bar : 9.9
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Supply pump
 pressure bar : 4.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2400
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 450
 Overflow quantity
 ccm/10s : 63.8

Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2

Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2550

Del. quantity
cm3/1000 strokes : 20.0

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 4.5

Shutoff solenoid
Volt : 12

Rated speed rpm : 2625

Del. quantity
cm3/1000 strokes : 13.5

Check tolerance
cm3/1000S. : 6.0

Shutoff solenoid
Volt : 12

Rated speed rpm : 2950

Del. quantity
cm3/1000 strokes : 1.0

Tolerance
cm3/1000 strokes : 1.0

Check tolerance
cm3/1000S. : 1.0

Shutoff solenoid
Volt : 12

Rated speed rpm : 2400

Del. quantity
cm3/1000 strokes : 29.3

Tolerance
cm3/1000 strokes : 1.0

Check tolerance
cm3/1000S. : 2.0

Shutoff solenoid
Volt : 12

Rated speed rpm : 750

Del. quantity
cm3/1000 strokes : 28.4

Tolerance
cm3/1000 strokes : 1.5

Check tolerance
cm3/1000S. : 2.3

Shutoff solenoid
Volt : 12

Rated speed rpm : 1000

Del. quantity
cm3/1000 strokes : 29.3

Tolerance
cm3/1000 strokes : 1.5

Check tolerance
cm3/1000S. : 2.3

Shutoff solenoid
Volt : 12

Rated speed rpm : 450

Del. quantity
cm3/1000 strokes : 31.5

Tolerance
cm3/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 2.8

Shutoff solenoid
Volt : 12

Rated speed rpm : 1500

Del. quantity
cm3/1000 strokes : 29.0

Tolerance
cm3/1000 strokes : 0.2

Check tolerance
cm3/1000S. : 1.7

Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 425

Del. quantity
cm3/1000 strokes : 1.5

Tolerance
cm3/1000 strokes : 1.5

Check tolerance
cm3/1000S. : 1.5

Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 425

Del. quantity
cm3/1000 strokes : 1.5

Tolerance
cm3/1000 strokes : 1.5

Spread
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 1.5

Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : -10.6
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : 0.5

Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 10.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 32.0
Tolerance
cm3/1000 strokes : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 275
Del. quantity
cm3/1000 strokes : 65.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,8
Tolerance mm : +0,2

POTENTIOMETER
SET

1. measurement
voltage Volt : 1= 3,4 V
2. measurement
voltage Volt : 2= 1,7 V

MICROSWITCH
SET

mm : 1=ARF 12,0
: 2=ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 38,0..42,0

Control lever
position YB mm : 57,3..66,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.10.95
Test oil : ISO 4113
Part no. : 0 460 484 082
Pump designation : VE4/8F2400R622-

Customer-spec. information
Customer : FORD
Motor : 1,8 L IDI
Power KW : 44.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overf
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 608 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

G01

Plunger stroke mm : 0,85
Tolerance mm : +-0,05
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Setting mm : 5.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity
cm3/1000 strokes : 29.0
Tolerance
cm3/1000 strokes : 0.2
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2550
Del. quantity
cm3/1000 strokes : 20.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -9.4
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2400
Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
SV travel mm : 1.5

Tolerance mm : 0.4
Check
tolerance mm : 0.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 400
SV travel mm : 2.4
Tolerance mm : 0.1
Check
tolerance mm : 1.0
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

Rated speed rpm : 1000
SV travel mm : 4.4
Tolerance mm : 1.2
Check
tolerance mm : 1.3
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2400
Supply pump
pressure bar : 9.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2400
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 450
Overflow quantity
ccm/10s : 63.8

Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2625
Del. quantity
cm³/1000 strokes : 13.5
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
Del. quantity
cm³/1000 strokes : 1.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
Del. quantity
cm³/1000 strokes : 29.3
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 28.4
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000

Del. quantity
cm³/1000 strokes : 29.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 31.5
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 2.8
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : 0.2
Check tolerance
cm³/1000S. : 1.7
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -10.6
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1200
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 0.5

Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 10.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 32.0
Tolerance
cm³/1000 strokes : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 275
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,8
Tolerance mm : +0,2

POTENTIOMETER
SET

1. measurement
voltage Volt : 1 = 3,4 V
2. measurement
voltage Volt : 2 = 1,7 V

MICROSWITCH
SET

mm : 1=ARF 12,0
: 2=ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 38,0..42,0

Control lever
position YB mm : 57,3..66,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.10.95
Test oil : ISO 4113
Part no. : 0 460 426 242
Pump designation : VE6/12F1350R623

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8060.45B.5100
Power KW : 130.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting mm : 2.0
Tolerance mm : 0.1
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 79.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.5
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 58.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 24
Check tolerance
cm3/1000S. : 5.0
KSB/AFB Volt : 24

IDLE SETTING

Rated speed rpm : 350
 Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 24
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 5.0
 KSB/AFB Volt : 24

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1500
 Pressure hPa : 1000
 Del. quantity
 cm³/1000 strokes : 40.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 24
 KSB/AFB Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 85.0
 Tolerance
 cm³/1000 strokes : 25.0
 Shutoff solenoid
 Volt : 24
 KSB/AFB Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 1000
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24
 KSB/AFB Volt : 24
 Rated speed rpm : 900

Aneroid pressure
 hPa : 1000
 SV travel mm : 0.8
 Tolerance mm : 0.3
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

KSB/AFB Volt : 24
 Setting point KSB
 Rated speed rpm : 340
 Aneroid pressure
 hPa : 1000

SV travel mm : 2.0
 Tolerance mm : 0.2
 Check
 tolerance mm : 1.2
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 470
 Aneroid pressure
 hPa : 1000

SV travel mm : 3.2
 Tolerance mm : 0.6
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1350
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 8.7
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 600
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.4
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 470

Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.8
Tolerance hPa : 0.8
Shutoff solenoid
Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 83.3
Tolerance
ccm/10s : 27.7
Check tolerance
ccm/10s : 27.7
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 1450
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 10.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 1600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 600
Aneroid pressure
hPa : 350
Del. quantity
cm³/1000 strokes : 68.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 73.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 82.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 79.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 24

MECHANICAL SHUTOFF

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 350

Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 85.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,6
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
MS1 dimension mm : 1,6
Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 43,1..48,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.03.96
Test oil : ISO 4113

Part no. : 0 460 424 117
Pump designation : VE4/12F1200R636

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 01
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Setting mm : 2.2
Tolerance mm : 0.2

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 850
Aneroid pressure
hPa : 1500

Setting hPa : 6.7
Tolerance hPa : 0.3

KSB/AFB Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 108.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 4.5

KSB/AFB Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm3/1000 strokes : 61.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 4.5

KSB/AFB Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 14.5
Tolerance
cm3/1000 strokes : 2.0
Spread
cm3/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 6.5

KSB/AFB Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1300
Pressure hPa : 1500

Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 3.0

KSB/AFB Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.0

Tolerance
cm³/1000 strokes : 1.0

KSB/AFB Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500

SV travel mm : 4.0
Tolerance mm : 0.4
Check
tolerance mm : 0.7

KSB/AFB Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 1500

SV travel mm : 1.0
Tolerance mm : 0.4
Check
tolerance mm : 0.7

KSB/AFB Volt : 12

Rated speed rpm : 1200

Aneroid pressure
hPa : 1500

SV travel mm : 4.9
Tolerance mm : 0.4

Check
tolerance mm : 0.4

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500

Supply pump
pressure bar : 8.6
Tolerance hPa : 0.3

KSB/AFB Volt : 12

Rated speed rpm : 550
Aneroid pressure
hPa : 1500

Supply pump
pressure bar : 5.2
Tolerance hPa : 0.3

KSB/AFB Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 550
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2

KSB/AFB Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6

KSB/AFB Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1300

Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 75.0
 Tolerance
 cm³/1000 strokes : 3.0
 KSB/AFB Volt : 12
 Rated speed rpm : 1340
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 12.0
 KSB/AFB Volt : 12
 Rated speed rpm : 1260
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 100.0
 Check tolerance
 cm³/1000S. : 5.0
 KSB/AFB Volt : 12
 Rated speed rpm : 1370
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 KSB/AFB Volt : 12
 Rated speed rpm : 550
 Aneroid pressure
 hPa : 400
 Del. quantity
 cm³/1000 strokes : 81.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.0
 KSB/AFB Volt : 12
 Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 103.0
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0

KSB/AFB Volt : 12
 Rated speed rpm : 700
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 114.0
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0
 KSB/AFB Volt : 12
 Rated speed rpm : 850
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 115.0
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 4.0
 KSB/AFB Volt : 12
 Rated speed rpm : 550
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 115.0
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 6.0
 KSB/AFB Volt : 12
 Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 108.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.5

MECHANICAL SHUTOFF

Rated speed rpm : 1200
 Aneroid pressure
 hPa : 1500
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5

Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0
KSB/AFB Volt : 12

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
KSB/AFB Volt : 12

START TRANSITION

Rated speed rpm : 430
Del. quantity
cm³/1000 strokes : 68.0
Tolerance
cm³/1000 strokes : 20.0
KSB/AFB Volt : 12

Rated speed rpm : 330
Del. quantity
cm³/1000 strokes : 90.0
Tolerance
cm³/1000 strokes : 15.0
KSB/AFB Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,4
Tolerance mm : +0,2
MS1 dimension mm : 1,5
Tolerance mm : +0,15/-0,1

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,4..40,4

Control lever
position YB mm : 35,4..40,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.03.96
Test oil : ISO 4113

Part no. : 0 460 424 123
Pump designation : VE4/12F1200R636-1

Customer-spec. information

Customer : MAN
Motor : D 0824 LFL 05
Power KW : 114.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 110

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 900
Aneroid pressure
hPa : 1500
Setting mm : 2.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 900
Aneroid pressure
hPa : 1500
Setting hPa : 7.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 62.5
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 24
Check tolerance
cm³/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 14.5
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 24

Spread
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000s. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1340
Pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1050
Aneroid pressure
hPa : 1500

SV travel mm : 3.7
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

Rated speed rpm : 800
Aneroid pressure
hPa : 1500

SV travel mm : 0.9
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500

SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 8.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

Rated speed rpm : 550
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 550
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1340
Aneroid pressure
hPa : 1500

Del. quantity
cm3/1000 strokes : 75.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 1410
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 7.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 1220
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 106.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 1420
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 1380
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 30.0
Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 550
Aneroid pressure
hPa : 500

LDA/
HBA stroke mm : 7.8
Del. quantity
cm3/1000 strokes : 99.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.5

Shutoff solenoid
Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 106.0
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 116.0
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 550
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 121.0
Tolerance
cm3/1000 strokes : 4.5
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm3/1000 strokes : 110.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 24

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5

Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 24

START TRANSITION

Rated speed rpm : 250
 Del. quantity
 cm³/1000 strokes : 30.0
 Tolerance
 cm³/1000 strokes : 20.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 150
 Del. quantity
 cm³/1000 strokes : 110.0
 Tolerance
 cm³/1000 strokes : 30.0
 Shutoff solenoid
 Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
 HBA stroke mm : 7.8
 Dimension K mm : 3,7
 Tolerance mm : +0,1
 Dimension KF mm : 6,4
 Tolerance mm : +0,2
 Dimension MS mm : 1,2
 Tolerance mm : +0,2

CONTROL LEVER POSITION SET

Control lever
 spacing
 Xl mm : 12.60
 Control lever
 spacing
 Xk mm : 21.00

Control lever
 position YA mm : 37,4..40,4

Control lever
 position YB mm : 41,9..47,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 31.08.95
Test oil : ISO 4113

Part no. : 0 460 424 119
Pump designation : VE4/12F1107R644

Customer-spec. information
Customer : CASE
Motor : 4 T-390/788
Power KW : 70.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 000

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 840

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 1,8
Outlet : A

Prestroke

(as of UT) mm : 0,3
Tolerance mm : +0,02
Check
tolerance mm : +0,04

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 800
Setting mm : 2.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 800
Setting hPa : 6.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 68.0
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 4.0
Shutoff solenoid
Volt : 24

IDLE SETTING

Rated speed rpm : 425
Del. quantity
cm3/1000 strokes : 9.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 24
Spread
cm3/1000 strokes : 5.5
Check tolerance
cm3/1000S. : 7.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1160
 Del. quantity
 cm³/1000 strokes : 42.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 90.0
 Tolerance
 cm³/1000 strokes : 20.0
 Shutoff solenoid
 Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1100
 SV travel mm : 3.8
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 500
 SV travel mm : 0.5
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1100
 Supply pump
 pressure bar : 8.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 500
 Supply pump
 pressure bar : 5.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 1100
 Overflow quantity
 ccm/10s : 83.3
 Tolerance
 ccm/10s : 27.7

Check tolerance
 ccm/10s : 27.7
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1160
 Del. quantity
 cm³/1000 strokes : 42.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000s. : 6.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1200
 Del. quantity
 cm³/1000 strokes : 32.5
 Check tolerance
 cm³/1000s. : 8.0
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1240
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 1.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 1100
 Del. quantity
 cm³/1000 strokes : 67.0
 Tolerance
 cm³/1000 strokes : 1.5

Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 750
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 32.0
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 900
Del. quantity
cm3/1000 strokes : 68.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 24

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 2.0
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 18.0
Tolerance
cm3/1000 strokes : 8.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 8.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 12.0
Tolerance
cm3/1000 strokes : 6.0
Shutoff solenoid
Volt : 24

START TRANSITION

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 72.0
Tolerance
cm3/1000 strokes : 8.0
Shutoff solenoid
Volt : 24

Rated speed rpm : 130
Del. quantity
cm3/1000 strokes : 98.0

Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension KF mm : 5,2
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,5
Tolerance mm : $\pm 0,15/-0,1$

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.95
Test oil : ISO 4113

Part no. : 0 460 484 103
Pump designation : VE4/8F2300R652

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 646
Power kW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2 00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.1
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8..3,0
: 16,2..17,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 64,1..76,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.06.95
Test oil : ISO 4113
Part no. : 0 460 484 104
Pump designation : VE4/8F2300R652-1

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 646
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

G27

Plunger stroke mm : 1,0
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm ³ /1000 strokes	:	55.0
Tolerance		
cm ³ /1000 strokes	:	15.0
Shutoff solenoid		
Volt	:	12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm	:	1250
Del. quantity		
cm ³ /1000 strokes	:	-7.0
Tolerance		
cm ³ /1000 strokes	:	1.0
Shutoff solenoid		
Volt	:	12

PRESSURE DIFFERENCE

Rated speed rpm	:	1250
Del. quantity		
cm ³ /1000 strokes	:	-0.2
Tolerance		
cm ³ /1000 strokes	:	0.1
Shutoff solenoid		
Volt	:	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm	:	1250
Del. quantity		
cm ³ /1000 strokes	:	-0.7
Tolerance		
cm ³ /1000 strokes	:	0.1
Shutoff solenoid		
Volt	:	12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm	:	2000
SV travel mm	:	6.1
Tolerance mm	:	0.4
Check		
tolerance mm	:	0.6
Shutoff solenoid		
Volt	:	12
Rated speed rpm	:	600

SV travel mm	:	1.2
Tolerance mm	:	0.4
Check		
tolerance mm	:	0.6
Shutoff solenoid		
Volt	:	12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm	:	2000
Supply pump		
pressure bar	:	7.5
Tolerance hPa	:	0.3
Shutoff solenoid		
Volt	:	12

Rated speed rpm	:	600
Supply pump		
pressure bar	:	3.6
Tolerance hPa	:	0.3
Shutoff solenoid		
Volt	:	12

OVERFLOW QUANTITY

Rated speed rpm	:	2250
Overflow quantity		
ccm/10s	:	97.2
Tolerance		
ccm/10s	:	41.6
Check tolerance		
ccm/10s	:	41.6
Shutoff solenoid		
Volt	:	12

Rated speed rpm	:	600
Overflow quantity		
ccm/10s	:	63.8
Tolerance		
ccm/10s	:	22.2

Check tolerance		
ccm/10s	:	22.2
Shutoff solenoid		
Volt	:	12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm	:	2450
Del. quantity		
cm ³ /1000 strokes	:	24.5
Tolerance		
cm ³ /1000 strokes	:	3.0
Check tolerance		
cm ³ /1000s.	:	4.0
Shutoff solenoid		
Volt	:	12

Rated speed rpm : 2650
Del. quantity
cm3/1000 strokes : 9.5
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm3/1000 strokes : 32.1
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1625
Del. quantity
cm3/1000 strokes : 31.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 32.5
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 31.9
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250

Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -9.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,2

Control lever
position YB mm : 64,1..76,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.10.95
Test oil : ISO 4113
Part no. : 0 460 426 229
Pump designation : VE6/12F1350R674

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8060.45.5000
Power KW : 105.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting mm : 1.4
Tolerance mm : 0.1
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting hPa : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 650
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 62.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Check tolerance
cm³/1000S. : 5.0

IDLE SETTING

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 16.5
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 24
Spread
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 5.0

KSB/AFB Volt : 24

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1550
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000

SV travel mm : 3.3
Tolerance mm : 0.3
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Setting point KSB
Rated speed rpm : 340
Aneroid pressure
hPa : 1000

SV travel mm : 2.0
Tolerance mm : 0.2
Check
tolerance mm : 0.5
Shutoff solenoid
Volt : 24

Rated speed rpm : 470
Aneroid pressure
hPa : 1000

SV travel mm : 3.2
Tolerance mm : 0.6
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 24

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 3.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

OVERFLOW QUANTITY

Rated speed rpm : 1350
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6

Shutoff solenoid
 Volt : 24
 KSB/AFB Volt : 24
 Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2
 Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 24
 KSB/AFB Volt : 24

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1550
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 6.0
 Shutoff solenoid
 Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 1500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 39.0
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0
 Shutoff solenoid
 Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 1600
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

Shutoff solenoid
 Volt : 24
 KSB/AFB Volt : 24
 Rated speed rpm : 1350
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 55.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 24
 KSB/AFB Volt : 24

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 63.5
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 650
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 62.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 24

Rated speed rpm : 500
 Aneroid pressure
 hPa : 80
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 0.5
 Check tolerance
 cm³/1000S. : 0.5
 Shutoff solenoid
 Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 500

Aneroid pressure
hPa : 220
Del. quantity
cm³/1000 strokes : 11.0
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 24
KSB/AFB Volt : 24

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 1.5
Spread
cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 425
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 300
Del. quantity
cm³/1000 strokes : 41.5
Tolerance
cm³/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

START TRANSITION

Rated speed rpm : 230
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

Rated speed rpm : 140
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 24

KSB/AFB Volt : 24

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,6
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
MS1 dimension mm : 1,3
Tolerance mm : +0,15/-0,1
KSB travel mm : 10,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 42,1..47,3

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.09.93
Test oil : ISO 4113

Part no. : 0 460 494 079
Pump designation : VE4/9F2250R84

Customer-spec. information
Customer : PSA
Motor : XD3 505D

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 4.0
Tolerance mm : 0.2

H08

Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1500
Del. quantity cm3/1000 strokes : 38.0
Tolerance cm3/1000 strokes : 0.5
Spread cm3/1000 strokes : 2.5
Shutoff solenoid Volt : 12

IDLE SETTING

Rated speed rpm : 400
Del. quantity cm3/1000 strokes : 8.0
Tolerance cm3/1000 strokes : 2.0
Shutoff solenoid Volt : 12
Spread cm3/1000 strokes : 2.5
Check tolerance cm3/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2325
Del. quantity cm3/1000 strokes : 28.5
Tolerance cm3/1000 strokes : 3.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 60.0
Tolerance cm3/1000 strokes : 15.0
Shutoff solenoid Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -10.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 8.6
Tolerance mm : 0.4
Check
tolerance mm : 1.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 1.0
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000

Supply pump
pressure bar : 7.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Supply pump
pressure bar : 3.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8
Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2325
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 8.5
Check tolerance
cm³/1000s. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2550
Del. quantity
cm³/1000 strokes : 1.0

Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 40.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 39.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 4.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 37.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 4.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1500
 Del. quantity
 cm3/1000 strokes : 38.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 440
 Del. quantity
 cm3/1000 strokes : 1.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 1.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 350
 Del. quantity
 cm3/1000 strokes : 28.0
 Tolerance
 cm3/1000 strokes : 4.0
 Check tolerance
 cm3/1000S. : 8.0
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -20.0
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0

Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 40.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : K1
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,5
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,1
Tolerance mm : $\pm 0,2$
TLA travel mm : 12,7

CONTROL LEVER POSITION SET

Control lever
position YA mm : 19,1..23,1

Control lever
position YB mm : 66,5..83,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.96
Test oil : ISO 4113
Part no. : 0 460 414 118
Pump designation : VE4/11F2250L619

Customer-spec. information
Customer : ROVER
Motor : TCI-em
Power KW : 63.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 55
Tolerance °C : 1

Overflow
restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 116

Opening pressure
bar : 207
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

H12

Plunger stroke mm : 0,55
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Setting mm : 7.4
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Setting hPa : 7.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 42.5
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 4.0

IDLE SETTING

Rated speed rpm : 375

Del. quantity
cm³/1000 strokes : 6.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 4.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2580
Pressure hPa : 1500
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 96.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 2000
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

SETTING GRAD. STARTING FUEL DELIVERY FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1400

H13

Aneroid pressure
hPa : 1500
Tolerance mm : 0.4
Check
tolerance mm : 0.9
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1500

SV travel mm : 6.6
Tolerance mm : 0.4
Check
tolerance mm : 0.9
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1500

SV travel mm : 0.3
Tolerance mm : 0.3
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

Timing device
solenoid Volt : 100

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1400
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1500
Supply pump
pressure bar : 6.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 700
Aneroid pressure
hPa : 1500
Overflow quantity
ccm/10s : 97.2

Tolerance
ccm/10s : 55.5

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1500
Overflow quantity
ccm/10s : 138.8
Tolerance
ccm/10s : 55.5

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2580
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2450
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2670
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000

Aneroid pressure
hPa : 500

LDA/
HBA stroke mm : 6.6
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.8
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5

Check tolerance
cm³/1000s. : 1.5
Spread
cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Spread
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 1.5
Spread
cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 480
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 320
Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.6
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,7
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,5
Tolerance mm : $+0,15/-0,1$

MICROSWITCH SET

mm : GST 76,9

CONTROL LEVER POSITION SET

Control lever
position YA mm : 35,8..39,8

Control lever
position YB mm : 48,1..57,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.03.96
Test oil : ISO 4113

Part no. : 0 460 414 137
Pump designation : VE4/11F1250L678

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8045.25K.214
Power KW : 69.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 027

Opening pressure
bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 950
Aneroid pressure
hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 950
Aneroid pressure
hPa : 1000
Setting hPa : 7.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 74.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 4.0

IDLE SETTING

Rated speed rpm : 335
Del. quantity
cm³/1000 strokes : 9.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 4.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 1330
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 100.0
Tolerance
cm³/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000
SV travel mm : 1.5
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000

Supply pump
pressure bar : 8.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 350
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 1330
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1360
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 38.0
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1470
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 250
Del. quantity
cm3/1000 strokes : 63.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 64.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 350
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 78.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 74.5

Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 335
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 335
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 250
Del. quantity
cm3/1000 strokes : 28.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 250
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 130
Del. quantity
cm³/1000 strokes : 107.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,1
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 34,9..36,9

Control lever
position YB mm : 47,9..52,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 414 116
Pump designation : VE4/11F1900R444 -1

Customer-spec. information

Customer : IVECO-SOFIM
Motor : 8140.47.3700
Power KW : 85.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.75

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 027

Opening pressure bar : 250
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Setting mm : 1.8
Tolerance mm : 0.1
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Aneroid pressure hPa : 1000
Setting hPa : 6.2
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1400
Aneroid pressure hPa : 1000
Del. quantity cm3/1000 strokes : 56.0
Tolerance cm3/1000 strokes : 0.5
Spread cm3/1000 strokes : 4.0
Check tolerance cm3/1000S. : 4.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 550
Del. quantity cm3/1000 strokes : 27.0
Tolerance cm3/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm3/1000S. : 4.5

IDLE SETTING

Rated speed rpm : 325
Del. quantity cm3/1000 strokes : 17.0
Tolerance cm3/1000 strokes : 2.0
Shutoff solenoid Volt : 12

Spread
cm3/1000 strokes : 6.0
Check tolerance
cm3/1000S. : 6.5

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2100
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 75.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1400
Pressure hPa : 1000
Del. quantity
cm3/1000 strokes : -26.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1600
Aneroid pressure
hPa : 1000
SV travel mm : 4.3
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1100
Aneroid pressure
hPa : 1000
SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
SV travel mm : 4.9
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 8.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 152.7
Tolerance
ccm/10s : 27.7

Check tolerance
ccm/10s : 27.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 116.6
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 18.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2290

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 400

LDA/
HBA stroke mm : 6.2
Del. quantity
cm³/1000 strokes : 44.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1900
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 58.0
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 3.5

Shutoff solenoid
 Volt : 12

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 57.0
 Tolerance
 cm³/1000 strokes : 4.5
 Check tolerance
 cm³/1000S. : 5.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 56.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 325
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 325
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 450

Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : -28.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : -0.8
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1400
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1400
Aneroid pressure
hPa : 1000
Tolerance mm : 0.2
Check
tolerance mm : 0.4
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 22.0
Tolerance
cm³/1000 strokes : 8.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 6.2
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 8,4
Tolerance mm : $\pm 0,2$
MS1 dimension mm : 1,6
Tolerance mm : $+0,15/-0,1$
KSB travel mm : 7,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,9..39,9

Control lever
position YB mm : 43,7..48,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 074
Pump designation : VE4/8F2300R598

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 620
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..69,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 075
Pump designation : VE4/8F2300R598-;

Customer-spec. information
Customer : RENAULT
Motor : F5Q - 620 CA
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12
Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12
Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm³/1000 strokes : 2.5
 Tolerance
 cm³/1000 strokes : 2.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm³/1000 strokes : 32.1
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm³/1000 strokes : 31.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm³/1000 strokes : 32.5
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm³/1000 strokes : 31.9
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 31.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Spread
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 1.5
 Spread
 cm³/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -9.5
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.7
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 087
Pump designation : VE4/8F2300R598-C

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 620
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 15.04.96
Test oil : ISO 4113

Part no. : 0 460 484 088
Pump designation : VE4/8F2300R598-3

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 620 CA
Power kW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12
Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12
Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8...3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 16.04.96

Test oil : ISO 4113

Part no. : 0 460 484 114

Pump designation : VE4/8F2300R598-4

Customer-spec. information

Customer : RENAULT

Motor : F8Q - 620

Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return

temperature °C : 45

Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35

Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130

Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7

Tolerance mm : 0.2

Shutoff solenoid

Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.5

Tolerance hPa : 0.3

Shutoff solenoid

Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 31.5

Tolerance

cm3/1000 strokes : 0.5

Spread

cm3/1000 strokes : 2.5

Shutoff solenoid

Volt : 12

HOUSING-FIXED IDLE SPRING

RESIDUAL QUANTITY SETTING

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 3.0

Tolerance

cm3/1000 strokes : 2.0

Shutoff solenoid

Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450

Del. quantity

cm3/1000 strokes : 24.5

Tolerance

cm3/1000 strokes : 3.0

Shutoff solenoid

Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 55.0

Tolerance

cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12
Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12
Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : 0,1
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96
Test oil : ISO 4113

Part no. : 0 460 484 115
Pump designation : VE4/8F2300R598-5

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 620 CA
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96
Test oil : ISO 4113

Part no. : 0 460 484 116
Pump designation : VE4/8F2300R598-G

Customer-spec. information

Customer : RENAULT
Motor : F8Q - 620 DDS
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm3/1000 strokes : 31.5
Tolerance cm3/1000 strokes : 0.5
Spread cm3/1000 strokes : 2.5
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity cm3/1000 strokes : 3.0
Tolerance cm3/1000 strokes : 2.0
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity cm3/1000 strokes : 24.5
Tolerance cm3/1000 strokes : 3.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity cm3/1000 strokes : 55.0
Tolerance cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.04.96
Test oil : ISO 4113

Part no. : 0 460 484 117
Pump designation : VE4/8F2300R598-7

Customer-spec. information
Customer : RENAULT
Motor : F8Q - 620 CA DDS
Power KW : 45.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 31.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Del. quantity
cm3/1000 strokes : 24.5
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 15.0

Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 6.3
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Supply pump
pressure bar : 7.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
Del. quantity
cm³/1000 strokes : 24.5
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 9.5
Check tolerance
cm³/1000s. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2950
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2250
 Del. quantity
 cm3/1000 strokes : 32.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1625
 Del. quantity
 cm3/1000 strokes : 31.0
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Del. quantity
 cm3/1000 strokes : 32.5
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 600
 Del. quantity
 cm3/1000 strokes : 31.9
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 31.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 410
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Spread
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 1.5
 Spread
 cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -9.5
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 2.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.7
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1

Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 310
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 210
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8..3,0
: 14,7..15,5

CONTROL LEVER POSITION SET

Control lever
position YA mm : 30,3..34,3

Control lever
position YB mm : 67,1..79,9

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.04.96
Test oil : ISO 4113

Part no. : 0 460 494 357
Pump designation : VE4/9F2400R581

Customer-spec. information
Customer : RENAULT
Motor : G8T - 752
Power KW : 59.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

K01

Plunger stroke mm : 1,0
Tolerance mm : $\pm 0,02$
Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 37.4
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 60.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -7.1
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.8
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 SV travel mm : 1.0

K02

Tolerance mm : 0.4
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 SV travel mm : 1.0
 Tolerance mm : 1.2
 Check
 tolerance mm : 1.2
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Supply pump
 pressure bar : 8.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Supply pump
 pressure bar : 4.7
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2300
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2600

Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 35.5
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2800
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2300
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 37.7
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 40.3
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750

Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 37.4
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 385
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 385
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250

Del. quantity
cm³/1000 strokes : -9.4
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 2.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 70.0
Tolerance
cm³/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 0,8
Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..41,2
Control lever
position YB mm : 61,3..69,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 04.04.96
 Test oil : ISO 4113
 Part no. : 0 460 494 358
 Pump designation : VE4/9F2400R581-1

Customer-spec. information
 Customer : RENAULT
 Motor : G8T - 752 CA
 Power KW : 59.0

TEST BENCH REQUIREMENTS

Calibrating-oil
 return
 temperature °C : 45
 Tolerance °C : 1

Overflow
 restriction mm : 0.55

Inlet press. bar : 0.35
 Tolerance bar : 0.05

Test nozzle holde
 assembly : 1 688 901 022

Opening pressure
 bar : 130
 Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
 x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

K05

Plunger stroke mm : 1,0
 Tolerance mm : +-0,02
 Outlet : C

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
 Setting mm : 2.5
 Tolerance mm : 0.2
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
 Setting hPa : 6.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 37.4
 Tolerance
 cm3/1000 strokes : 0.5
 Spread
 cm3/1000 strokes : 2.5
 Shutoff solenoid
 Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2600
 Del. quantity
 cm3/1000 strokes : 23.0
 Tolerance
 cm3/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 60.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -7.1
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.8
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 SV travel mm : 1.0

Tolerance mm : 0.4
 Check
 tolerance mm : 0.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 SV travel mm : 1.0
 Tolerance mm : 1.2
 Check
 tolerance mm : 1.2
 Shutoff solenoid
 Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Supply pump
 pressure bar : 8.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Supply pump
 pressure bar : 4.7
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2300
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2600

Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 35.5
Tolerance
cm3/1000 strokes : 4.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2800
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2300
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Del. quantity
cm3/1000 strokes : 37.7
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Del. quantity
cm3/1000 strokes : 40.3
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 750

Del. quantity
cm3/1000 strokes : 36.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 37.4
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 385
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 385
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250

Del. quantity
cm3/1000 strokes : -9.4
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 2.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.8
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 23.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 30.0

K08

Tolerance
cm3/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 200
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 25.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 0,8
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 37,2..41,2

Control lever
position YB mm : 61,3..69,7

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.96
Test oil : ISO 4113

Part no. : 0 460 404 086
Pump designation : VE4/10F2100L414 2

Customer-spec. information

Customer : VM
Motor : 425 SLTRS
Power KW : 77.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting mm : 2.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Setting hPa : 4.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 59.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 700
Del. quantity
cm3/1000 strokes : 43.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 3.0

IDLE SETTING

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

Spread
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2300
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 65.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : -25.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : -0.9
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
SV travel mm : 4.6
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

SV travel mm : 1.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000

SV travel mm : 6.6
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000

Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2300
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2550
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 700

Aneroid pressure
hPa : 500

LDA/
HBA stroke mm : 5.7
Del. quantity
cm³/1000 strokes : 57.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2100
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 58.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 60.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 59.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000s. : 2.0
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 450
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5

Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -30.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0

Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : -0.9
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Tolerance mm : 0.3
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 43.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 550

Del. quantity
cm³/1000 strokes : 42.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 60.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.7
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 0,8
Tolerance mm : $\pm 0,2$
TLA travel mm : 12,7

MICROSWITCH
SET

: ARF 12,0

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 38,8..40,8

Control lever
position YB mm : 38,6..48,4

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.04.96
Test oil : ISO 4113

Part no. : 0 460 494 437
Pump designation : VE4/9F2250R593-3

Customer-spec. information
Customer : RENAULT
Motor : G8T - 760
Power KW : 81.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Setting mm : 2.8
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Setting hPa : 5.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 58.7
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 43.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 450
Del. quantity
cm3/1000 strokes : 7.0
Tolerance
cm3/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2450
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -8.5
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.7
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
SV travel mm : 1.9
Tolerance mm : 0.4
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Aneroid pressure
hPa : 1000
SV travel mm : 2.7
Tolerance mm : 1.2
Check
tolerance mm : 1.2
Shutoff solenoid
Volt : 12

KSB/AFB Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 3.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 22.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2450
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 30.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2525
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 8.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2600
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 2.5
 Tolerance
 cm3/1000 strokes : 2.5
 Check tolerance
 cm3/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 300

LDA/
 HBA stroke mm : 7.3
 Del. quantity
 cm3/1000 strokes : 50.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 56.7
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 59.6
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 57.2
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 58.7
 Tolerance
 cm3/1000 strokes : 0.5

Check tolerance
cm3/1000S. : 2.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 350
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -11.0
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.7

Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.3
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 300
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 180
Del. quantity
cm3/1000 strokes : 54.0
Tolerance
cm3/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 7.3
Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 0,9
Tolerance mm : +0,2

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 4,5

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.02.96
Test oil : ISO 4113

Part no. : 0 460 494 354
Pump designation : VE4/9F2150R577

Customer-spec. information
Customer : NISSAN-MISA
Motor : GX-3
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200
Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200
Setting hPa : 5.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2150
SV travel mm : 9.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2150
Supply pump
pressure bar : 8.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Supply pump
pressure bar : 5.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2350
Del. quantity
cm³/1000 strokes : 33.3
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 5.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2700
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 42.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 43.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5

Shutoff solenoid
Volt : 12

Rated speed rpm : 1800
Del. quantity
cm3/1000 strokes : 44.3
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 1.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5

Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Del. quantity
cm3/1000 strokes : 0.80
Tolerance
cm3/1000 strokes : 0.02
Check tolerance
cm3/1000S. : 0.10

START TRANSITION

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 45.0
Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 270
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,2
Tolerance mm : $\pm 0,2$
KSB travel mm : 4,3
TLA travel mm : 6,5

POTENTIOMETER
SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : 0,8

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 35,1..39,1

Control lever
position YB mm : 56,9..68,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.02.96
Test oil : ISO 4113

Part no. : 0 460 494 355
Pump designation : VE4/9F2150R577-1

Customer-spec. information
Customer : NISSAN-MISA
Motor : GX-3
Power KW : 53.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1200

Setting mm : 3.2
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1200

Setting hPa : 5.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12

IDLE SETTING

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 3.0

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 15.0
Tolerance
cm3/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 60.0

Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2150
SV travel mm : 9.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
SV travel mm : 1.2
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2150
Supply pump
pressure bar : 8.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Supply pump
pressure bar : 5.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 22.2
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 15.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 4.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2350
Del. quantity
cm³/1000 strokes : 33.3
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 5.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2700
Del. quantity
cm³/1000 strokes : 2.5
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 42.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 43.2
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 2.5

Shutoff solenoid
Volt : 12

Rated speed rpm : 1800
Del. quantity
cm3/1000 strokes : 44.3
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 41.0
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Del. quantity
cm3/1000 strokes : 44.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 1.3
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Spread
cm3/1000 strokes : 5.0

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 375
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Spread
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 1.5

Spread
cm3/1000 strokes : 5.0

IDLE DELIVERY

Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 2.5
Tolerance
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 45.0
Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 270
Del. quantity
cm3/1000 strokes : 70.0
Tolerance
cm3/1000 strokes : 20.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,2
Tolerance mm : +0,2
KSB travel mm : 4,3
TLA travel mm : 6,5

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 35,1..39,1

Control lever
position YB mm : 56,9..68,1

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.02.95
Test oil : ISO 4113

Part no. : 0 460 494 385
Pump designation : VE4/9F2150R281-C

Customer-spec. information

Customer : PSA
Motor : XUD11ATE-Y BVA
Power KW : 78.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Setting mm : 2.9
Tolerance mm : 0.1
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 61.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Check tolerance
cm3/1000S. : 2.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 42.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 2.5
Check tolerance
cm3/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550

Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2250
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
SV travel mm : 6.9
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

SV travel mm : 1.6
Tolerance mm : 0.3
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0

Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2400
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 37.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2700
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 8.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 400
 Del. quantity
 cm³/1000 strokes : 56.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 57.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 17.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 62.0
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 60.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 2.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 61.5
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.3
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 325
 Del. quantity
 cm³/1000 strokes : 1.5

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 17.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 5,4
Tolerance mm : +0,2
Dimension MS mm : 1,4
Tolerance mm : +0,2

POTENTIOMETER SET

1. measurement
voltage Volt : 5,0
1. measurement
voltage Volt : ARF1=2,9 V
2. measurement
voltage Volt : ARF2=1,9 V

MICROSWITCH SET

: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.07.94
Test oil : ISO 4113

Part no. : 0 460 484 054
Pump designation : VE4/8F2300R425-1

Customer-spec. information

Customer : PSA
Motor : XUD9AL Peug. D70

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 30.2
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 3.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity cm³/1000 strokes : 11.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm3/1000 strokes : 55.0
Tolerance
cm3/1000 strokes : 13.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -6.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -1.0
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 7.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
Rated speed rpm : 800
SV travel mm : 1.6
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 22.5

Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm3/1000 strokes : 3.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 33.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 31.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 30.2
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF
 CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT
 START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -8.5
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Supply pump
 pressure bar : -1.5
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Tolerance mm : 0.5
 Check
 tolerance mm : 0.6

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 18,8..22,8

Control lever
position YB mm : 78,4..90,6

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.04.95
Test oil : ISO 4113
Part no. : 0 460 484 098
Pump designation : VE4/8F2300R425-11

Customer-spec. information
Customer : PSA
Motor : XUD9 A/L
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

L07

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm3/1000 strokes : 55.0
 Tolerance
 cm3/1000 strokes : 13.0
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -6.0
 Tolerance
 cm3/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -0.2
 Tolerance
 cm3/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0
 Tolerance
 cm3/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 SV travel mm : 7.1
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 800

SV travel mm : 1.6
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
 Supply pump
 pressure bar : 8.5
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Supply pump
 pressure bar : 3.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 55.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 34.7
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
 Del. quantity
 cm3/1000 strokes : 11.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000s. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm³/1000 strokes : 22.5
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm³/1000 strokes : 3.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm³/1000 strokes : 33.0
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 31.3
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 30.2
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5

Check tolerance
 cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -8.5
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -1.0
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 5.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250

Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 10.11.95

Test oil : ISO 4113

Part no. : 0 460 484 109

Pump designation : VE4/8F2300R425-13

Customer-spec. information

Customer : PSA

Motor : XUD9 A L3

Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return

temperature °C : 45

Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35

Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130

Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

L11

Plunger stroke mm : 0,3

Tolerance mm : +0,02

Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.5

Tolerance mm : 0.2

Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.0

Tolerance hPa : 0.3

Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250

Del. quantity
cm³/1000 strokes : 30.2

Tolerance
cm³/1000 strokes : 0.5

Spread
cm³/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 5.0

Tolerance
cm³/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : 2.0

Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 47.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -6.0
Tolerance
cm3/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -0.2
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -1.0
Tolerance
cm3/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm3/1000 strokes : 22.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 33.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 31.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 30.2
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -7.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 21.4
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,4
Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.02.96
Test oil : ISO 4113
Part no. : 0 460 484 110
Pump designation : VE4/8F2300R425-14

Customer-spec. information
Customer : PSA
Motor : XUD9AY-L3 cit.ZX
Power KW : 50.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test Lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,2$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2
Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm³/1000 strokes : 22.5
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm³/1000 strokes : 33.0
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm³/1000 strokes : 31.3
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 30.2
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm³/1000 strokes : 1.5
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -7.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -1.0
 Tolerance
 cm³/1000 strokes : 0.1
 Check tolerance
 cm³/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : 5.0
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 19.4
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 27,8..31,8

Control lever
position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.95
Test oil : ISO 4113
Part no. : 0 460 484 057
Pump designation : VE4/8F2300R425-3

Customer-spec. information

Customer : PSA
Motor : XUD9AL - BVA

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.3
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.1
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 30.2
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 5.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity cm³/1000 strokes : 11.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 13.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -7.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 7.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
Rated speed rpm : 800
SV travel mm : 0.7
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 7.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 22.5

Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm3/1000 strokes : 3.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 33.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 31.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 30.2
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -8.0
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.2
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

End of test-specification sheet

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,4
Tolerance mm : +0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 33,8..37,8

Control lever
position YB mm : 63,0..77,0

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.95
Test oil : ISO 4113

Part no. : 0 460 484 064
Pump designation : VE4/8F2300R425-5

Customer-spec. information

Customer : PSA
Motor : XUD9 A-L

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.7
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 30.2
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 4.5
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity cm³/1000 strokes : 11.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 55.0
Tolerance
cm³/1000 strokes : 13.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 7.1
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800
SV travel mm : 1.6
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
Del. quantity
cm³/1000 strokes : 22.5

Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2900
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Del. quantity
cm³/1000 strokes : 33.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 31.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -8.5
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6

Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 28,8..32,8

Control lever
position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.95
Test oil : ISO 4113
Part no. : 0 460 484 070
Pump designation : VE4/8F2300R425-6

Customer-spec. information
Customer : PSA
Motor : XUD9AY/L3 Cit.ZX

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : +0,2
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 30.2
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 5.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm3/1000 strokes : 11.0
Tolerance
cm3/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm3/1000 strokes : 22.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 33.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 31.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 30.2
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -7.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 21.4
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8..3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 27,8..31,8

Control lever
position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.11.95
Test oil : ISO 4113

Part no. : 0 460 484 092
Pump designation : VE4/8F2300R425-9

Customer-spec. information
Customer : PSA
Motor : XUD9A-L BVA
Power kW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

M03

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250

Setting mm : 3.3
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250

Setting hPa : 5.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
 Del. quantity
 cm³/1000 strokes : 55.0
 Tolerance
 cm³/1000 strokes : 13.0
 Shutoff solenoid
 Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -7.0
 Tolerance
 cm³/1000 strokes : 1.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -0.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm³/1000 strokes : -1.2
 Tolerance
 cm³/1000 strokes : 0.1
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 SV travel mm : 7.1
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12
 Rated speed rpm : 800

SV travel mm : 0.7
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
 Supply pump
 pressure bar : 7.6
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Supply pump
 pressure bar : 3.0
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 55.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Overflow quantity
 ccm/10s : 63.8
 Tolerance
 ccm/10s : 22.2

Check tolerance
 ccm/10s : 34.7
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
 Del. quantity
 cm³/1000 strokes : 11.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2500
Del. quantity
cm3/1000 strokes : 22.5
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2900
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2200
Del. quantity
cm3/1000 strokes : 33.0
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 31.3
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : 30.2
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.2
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

M05

Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -8.0
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 5.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm3/1000 strokes : -1.2
Tolerance
cm3/1000 strokes : 0.1
Check tolerance
cm3/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250

Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Del. quantity
cm³/1000 strokes : 10.7

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,4

Tolerance mm : +0,2

MICROSWITCH SET

mm : 0,8...3,0
: 10,7

CONTROL LEVER POSITION SET

Control lever
position YA mm : 33,8..37,8

Control lever
position YB mm : 63,0..77,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.11.95
Test oil : ISO 4113

Part no. : 0 460 484 093
Pump designation : VE4/8F2300R425-0

Customer-spec. information

Customer : PSA
Motor : XUD9AY-L3 Cit.ZX
Power KW : 51.0

TEST BENCH REQUIREMENTS

Calibrating-oil return

temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

M07

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 3.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 6.0
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 30.2
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY
CONTROL LEVER, IDLE STOP

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 47.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY
SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -6.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -1.0
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 800

SV travel mm : 0.8
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2200
Supply pump
pressure bar : 8.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2200
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 63.8
Tolerance
ccm/10s : 22.2

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2650
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2500
 Del. quantity
 cm3/1000 strokes : 22.5
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2900
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 33.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Del. quantity
 cm3/1000 strokes : 31.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 30.2
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2200
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -7.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0
 Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -1.5
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.5
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 21.4
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 54.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,7
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 27,8..31,8

Control lever
position YB mm : 74,0..85,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.10.93
Test oil : ISO 4113

Part no. : 0 460 494 279
Pump designation : VE4/9F2300R426

Customer-spec. information

Customer : PSA
Motor : XUD 9/Y-N2 (1.9L)

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : B

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Setting mm : 4.2
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Setting hPa : 5.2
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 1250
Del. quantity cm³/1000 strokes : 28.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 3.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2440
Del. quantity cm³/1000 strokes : 23.0
Tolerance cm³/1000 strokes : 2.0
Shutoff solenoid Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 59.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -5.5
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.2
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
SV travel mm : 8.0
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
Rated speed rpm : 800
SV travel mm : 1.9
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2250
Supply pump
pressure bar : 7.9
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Supply pump
pressure bar : 3.1
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2250
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 55.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 34.7
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2440
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2540
Del. quantity
cm³/1000 strokes : 13.0

Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2750
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2250
Del. quantity
cm³/1000 strokes : 31.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 28.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF
CONTROL LEVER, IDLE STOP

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

CHECKING LOAD-DEPENDENT
START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -8.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 5.0
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : -0.8
Tolerance
cm³/1000 strokes : 0.1
Check tolerance
cm³/1000S. : 0.1
Shutoff solenoid
Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
Del. quantity
cm³/1000 strokes : 5.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
Supply pump
pressure bar : -0.8
Tolerance hPa : 0.2
Shutoff solenoid
Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
Tolerance mm : 0.2
Check
tolerance mm : 0.6
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1125
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000s. : 4.0
Shutoff solenoid
Volt : 12

Del. quantity
cm³/1000 strokes : 10.8

START TRANSITION

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 225
Del. quantity
cm³/1000 strokes : 63.0
Tolerance
cm³/1000 strokes : 17.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,8
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,4
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 1=ARF 8,0
: 2=ARF 10,8

CONTROL LEVER POSITION SET

Control lever
position YA mm : 18,8..22,8

Control lever
position YB mm : 82,0..96.0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.01.94
Test oil : ISO 4113
Part no. : 0 460 494 342
Pump designation : VE4/9F2250R445-?

Customer-spec. information
Customer : PSA
Motor : XUD 9 TE-L, TF-L

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting mm : 3.6
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting hPa : 5.6
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000s. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000s. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity	
cm ³ /1000 strokes :	8.5
Tolerance	
cm ³ /1000 strokes :	0.5
Shutoff solenoid	
Volt :	12

FULL-LOAD SPEED REGULATION

Rated speed rpm :	2575
Pressure hPa :	1000
Del. quantity	
cm ³ /1000 strokes :	14.0
Tolerance	
cm ³ /1000 strokes :	2.0
Shutoff solenoid	
Volt :	12

STARTING FUEL DELIVERY

Rated speed rpm :	150
Del. quantity	
cm ³ /1000 strokes :	52.0
Tolerance	
cm ³ /1000 strokes :	15.0
Shutoff solenoid	
Volt :	12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm :	200
Del. quantity	
cm ³ /1000 strokes :	53.0
Tolerance	
cm ³ /1000 strokes :	3.0
Shutoff solenoid	
Volt :	12

LOAD-DEPENDENT START OF DELIVERY SETTING

DELIVERY DIFFERENCE

Rated speed rpm :	1250
Del. quantity	
cm ³ /1000 strokes :	-10.0
Tolerance	
cm ³ /1000 strokes :	1.0
Shutoff solenoid	
Volt :	12

PRESSURE DIFFERENCE

Rated speed rpm :	1250
Del. quantity	
cm ³ /1000 strokes :	-0.2
Tolerance	
cm ³ /1000 strokes :	0.1

Shutoff solenoid	
Volt :	12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm :	1250
Del. quantity	
cm ³ /1000 strokes :	-1.0
Tolerance	
cm ³ /1000 strokes :	0.1
Shutoff solenoid	
Volt :	12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm :	2000
Aneroid pressure	
hPa :	1000
SV travel mm :	6.5
Tolerance mm :	0.4
Check	
tolerance mm :	0.7
Shutoff solenoid	
Volt :	12

Rated speed rpm :	750
Aneroid pressure	
hPa :	1000

SV travel mm :	1.5
Tolerance mm :	0.4
Check	
tolerance mm :	0.7
Shutoff solenoid	
Volt :	12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm :	2000
Aneroid pressure	
hPa :	1000
Supply pump	
pressure bar :	7.5
Tolerance hPa :	0.3
Shutoff solenoid	
Volt :	12

Rated speed rpm :	750
Aneroid pressure	
hPa :	1000
Supply pump	
pressure bar :	4.3
Tolerance hPa :	0.3
Shutoff solenoid	
Volt :	12

OVERFLOW QUANTITY

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6
 Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 62.5
 Tolerance
 ccm/10s : 20.8
 Check tolerance
 ccm/10s : 20.8
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : 2.0
 Check tolerance
 cm³/1000s. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2375
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 39.0
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000s. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 3.0

Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000s. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 350
 Del. quantity
 cm³/1000 strokes : 46.0
 Tolerance
 cm³/1000 strokes : 0.5
 Check tolerance
 cm³/1000s. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 50.1
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000s. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 52.0
 Tolerance
 cm³/1000 strokes : 1.0
 Check tolerance
 cm³/1000s. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 48.3
 Tolerance
 cm³/1000 strokes : 1.5
 Check tolerance
 cm³/1000s. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 54.0

Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

CHECKING LOAD-DEPENDENT START OF DELIVERY

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -13.0
 Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 5.0
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : -1.0

Tolerance
 cm3/1000 strokes : 0.1
 Check tolerance
 cm3/1000S. : 0.1
 Shutoff solenoid
 Volt : 12

DELIVERY DIFFERENCE

Rated speed rpm : 1250
 Del. quantity
 cm3/1000 strokes : 5.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

PRESSURE DIFFERENCE

Rated speed rpm : 1250
 Supply pump
 pressure bar : -1.1
 Tolerance hPa : 0.2
 Shutoff solenoid
 Volt : 12

TIMING-DEVICE TRAVEL DIFFERENCE

Rated speed rpm : 1250
 Tolerance mm : 0.2
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

START TRANSITION

Rated speed rpm : 380
 Del. quantity
 cm3/1000 strokes : 35.0
 Tolerance
 cm3/1000 strokes : 10.0
 Shutoff solenoid
 Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
 Tolerance mm : +0,1
 Dimension KF mm : 6,0
 Tolerance mm : +0,2
 Dimension MS mm : 1,3
 Tolerance mm : +0,2

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.94
Test oil : ISO 4113
Part no. : 0 460 494 370
Pump designation : VE4/9F2250R445-?

Customer-spec. information

Customer : PSA
Motor : XUD 9 TE-L;P.306

TEST BENCH REQUIREMENTS

Overflow restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 54.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.0
Check tolerance cm³/1000S. : 3.0
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 37.0
Tolerance cm³/1000 strokes : 0.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490

Del. quantity	
cm ³ /1000 strokes :	8.5
Tolerance	
cm ³ /1000 strokes :	0.5
Shutoff solenoid	
Volt :	12

FULL-LOAD SPEED REGULATION

Rated speed rpm :	2575
Pressure hPa :	1000
Del. quantity	
cm ³ /1000 strokes :	14.0
Tolerance	
cm ³ /1000 strokes :	2.0
Shutoff solenoid	
Volt :	12

STARTING FUEL DELIVERY

Rated speed rpm :	150
Del. quantity	
cm ³ /1000 strokes :	52.0
Tolerance	
cm ³ /1000 strokes :	15.0
Shutoff solenoid	
Volt :	12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm :	200
Del. quantity	
cm ³ /1000 strokes :	53.0
Tolerance	
cm ³ /1000 strokes :	3.0
Shutoff solenoid	
Volt :	12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm :	2000
Aneroid pressure	
hPa :	1000
SV travel mm :	6.5
Tolerance mm :	0.4
Check	
tolerance mm :	0.7
Shutoff solenoid	
Volt :	12

Rated speed rpm :	900
Aneroid pressure	
hPa :	1000

SV travel mm :	1.2
Tolerance mm :	0.4
Check	
tolerance mm :	0.7
Shutoff solenoid	
Volt :	12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm :	2000
Aneroid pressure	
hPa :	1000
Supply pump	
pressure bar :	6.8
Tolerance hPa :	0.3
Shutoff solenoid	
Volt :	12

Rated speed rpm :	900
Aneroid pressure	
hPa :	1000
Supply pump	
pressure bar :	4.2
Tolerance hPa :	0.3
Shutoff solenoid	
Volt :	12

OVERFLOW QUANTITY

Rated speed rpm :	2150
Aneroid pressure	
hPa :	1000
Overflow quantity	
ccm/10s :	97.2
Tolerance	
ccm/10s :	41.6
Check tolerance	
ccm/10s :	41.6
Shutoff solenoid	
Volt :	12

Rated speed rpm :	500
Aneroid pressure	
hPa :	1000
Overflow quantity	
ccm/10s :	62.5
Tolerance	
ccm/10s :	20.8
Check tolerance	
ccm/10s :	20.8
Shutoff solenoid	
Volt :	12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm :	2575
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Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2375
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 350

LDA/
HBA stroke mm : 5,9
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 50.1
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2

Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 48.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : +0,1
Dimension KF mm : 6,0
Tolerance mm : +0,2
Dimension MS mm : 1,3
Tolerance mm : +0,2

CONTROL LEVER POSITION SET

Control lever
position YA mm : 28,8..32,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and
adjustment instructions.
See microcard(s) W400/...

Edition : 28.09.95
Test oil : ISO 4113

Part no. : 0 460 494 388
Pump designation : VE4/9F2250R445-4

Customer-spec. information
Customer : PSA
Motor : XUD 9 TE-L;P.306

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 54.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
 Pressure hPa : 1000
 Del. quantity
 cm3/1000 strokes : 14.0
 Tolerance
 cm3/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
 Del. quantity
 cm3/1000 strokes : 52.0
 Tolerance
 cm3/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
 Del. quantity
 cm3/1000 strokes : 53.0
 Tolerance
 cm3/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 SV travel mm : 6.5
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1000

SV travel mm : 1.2
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7

Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 6.8
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 62.5
 Tolerance
 ccm/10s : 20.8

Check tolerance
 ccm/10s : 20.8
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 14.0
 Tolerance
 cm3/1000 strokes : 2.0

Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2375
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 350
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 51.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 1.0

Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 48.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 28,8..32,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95
Test oil : ISO 4113

Part no. : 0 460 494 409
Pump designation : VE4/9F2250R445-

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF-L
Power KW : 67.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 54.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000

SV travel mm : 6.5
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000

SV travel mm : 1.2
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0

Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2375
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 39.0
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 3.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5.9
 Del. quantity
 cm3/1000 strokes : 46.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 50.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000

Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 52.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 48.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 54.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5

Check tolerance
cm³/1000s. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5.9
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 25,8..29,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95
Test oil : ISO 4113

Part no. : 0 460 494 410
Pump designation : VE4/9F2250R445-A

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF/L
Power KW : 67.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 54.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
SV travel mm : 6.5
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000

SV travel mm : 1.2
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0

Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2375
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 39.0
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 3.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 350
 Del. quantity
 cm3/1000 strokes : 46.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 50.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 52.0

Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 48.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 54.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 25,8..29,8

Control lever
position YB mm : 68,082,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.06.95
Test oil : ISO 4113

Part no. : 0 460 494 411
Pump designation : VE4/9F2250R445-7

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF/L
Power KW : 67.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity
cm³/1000 strokes : 8.5
Tolerance
cm³/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000

SV travel mm : 6.5
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000

SV travel mm : 1.2
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0

Tolerance
 cm3/1000 strokes : 2.0
 Check tolerance
 cm3/1000S. : 4.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2375
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 39.0
 Tolerance
 cm3/1000 strokes : 5.0
 Check tolerance
 cm3/1000S. : 6.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2750
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 3.0
 Tolerance
 cm3/1000 strokes : 3.0
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 750
 Aneroid pressure
 hPa : 350

LDA/
 HBA stroke mm : 5,9
 Del. quantity
 cm3/1000 strokes : 46.0
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 50.1
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 2000

Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 52.0
 Tolerance
 cm3/1000 strokes : 1.0
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 48.3
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 3.0
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 1250
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 54.5
 Tolerance
 cm3/1000 strokes : 0.5
 Check tolerance
 cm3/1000S. : 2.2
 Shutoff solenoid
 Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5
 Check tolerance
 cm3/1000S. : 1.5
 Shutoff solenoid
 Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
 Del. quantity
 cm3/1000 strokes : 1.5
 Tolerance
 cm3/1000 strokes : 1.5

Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 25,8..29,8

Control lever
position YB mm : 73,0..87,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 25.04.95
Test oil : ISO 4113

Part no. : 0 460 494 412
Pump designation : VE4/9F2250R445-8

Customer-spec. information

Customer : PSA
Motor : XUD 9 TF/L
Power KW : 67.0

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 54.5
Tolerance
cm3/1000 strokes : 0.5
Spread
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 37.0
Tolerance
cm3/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm3/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity
cm3/1000 strokes : 8.5
Tolerance
cm3/1000 strokes : 0.5

Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0
Tolerance
cm³/1000 strokes : 2.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 15.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 53.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
SV travel mm : 6.5
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000

SV travel mm : 1.2
Tolerance mm : 0.4

Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 6.8
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 900
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.2
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 14.0

Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2375
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 39.0
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2750
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 3.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 350

LDA/
HBA stroke mm : 5,9
Del. quantity
cm³/1000 strokes : 46.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 50.1
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000

Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 1.0
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 48.3
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.2
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5

Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION
SET

Control lever
position YA mm : 25,8..29,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.10.95
Test oil : ISO 4113

Part no. : 0 460 494 428
Pump designation : VE4/9F2250R445-0

Customer-spec. information
Customer : PSA
Motor : XUD 9 TE-L;

TEST BENCH REQUIREMENTS

Calibrating-oil
return
temperature °C : 45
Tolerance °C : 1

Overflow
restriction mm : 0.55

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting mm : 4.1
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1500
Aneroid pressure
hPa : 1000
Setting hPa : 5.7
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 54.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 37.0
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 3.0

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 490
Del. quantity
cm³/1000 strokes : 8.5
Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2575
 Pressure hPa : 1000
 Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : 2.0
 Shutoff solenoid
 Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 150
 Del. quantity
 cm³/1000 strokes : 52.0
 Tolerance
 cm³/1000 strokes : 15.0
 Shutoff solenoid
 Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
 Del. quantity
 cm³/1000 strokes : 53.0
 Tolerance
 cm³/1000 strokes : 3.0
 Shutoff solenoid
 Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 SV travel mm : 6.5
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1000

SV travel mm : 1.2
 Tolerance mm : 0.4
 Check
 tolerance mm : 0.7

Shutoff solenoid
 Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 6.8
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1000
 Supply pump
 pressure bar : 4.2
 Tolerance hPa : 0.3
 Shutoff solenoid
 Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2150
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 97.2
 Tolerance
 ccm/10s : 41.6

Check tolerance
 ccm/10s : 41.6
 Shutoff solenoid
 Volt : 12

Rated speed rpm : 500
 Aneroid pressure
 hPa : 1000
 Overflow quantity
 ccm/10s : 62.5
 Tolerance
 ccm/10s : 20.8

Check tolerance
 ccm/10s : 20.8
 Shutoff solenoid
 Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2575
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 14.0
 Tolerance
 cm³/1000 strokes : 2.0

Check tolerance
cm3/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2375
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 39.0
Tolerance
cm3/1000 strokes : 5.0
Check tolerance
cm3/1000S. : 6.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2750
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 3.0
Tolerance
cm3/1000 strokes : 3.0
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 350

LDA/
HBA stroke mm : 5,9
Del. quantity
cm3/1000 strokes : 46.0
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2150
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 51.0
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 52.0
Tolerance
cm3/1000 strokes : 1.0
Check tolerance
cm3/1000S. : 2.2
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 48.3
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 54.5
Tolerance
cm3/1000 strokes : 0.5
Check tolerance
cm3/1000S. : 2.2
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 400
Del. quantity
cm3/1000 strokes : 1.5
Tolerance
cm3/1000 strokes : 1.5
Check tolerance
cm3/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

START TRANSITION

Rated speed rpm : 380
Del. quantity
cm³/1000 strokes : 35.0
Tolerance
cm³/1000 strokes : 10.0
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

LDA/
HBA stroke mm : 5,9
Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 6,0
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,3
Tolerance mm : $\pm 0,2$

CONTROL LEVER POSITION SET

Control lever
position YA mm : 28,8..32,8

Control lever
position YB mm : 68,0..82,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.09.92
Test oil : ISO 4113

Part no. : 0 460 494 310
Pump designation : VE4/9F2150R474

Customer-spec. information
Customer : PSA
Motor : XUD11ATE-L BVM

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holder assembly : 1 688 901 022

Opening pressure bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

N20

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure hPa : 1000
Del. quantity cm³/1000 strokes : 61.5
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Check tolerance cm³/1000S. : 2.5
Shutoff solenoid Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity cm³/1000 strokes : 43.0
Tolerance cm³/1000 strokes : 0.5
Spread cm³/1000 strokes : 2.5
Shutoff solenoid Volt : 12
Check tolerance cm³/1000S. : 2.5
Check tolerance cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity cm³/1000 strokes : 3.0

Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2250
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
SV travel mm : 5.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12
Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
SV travel mm : 1.3

Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6
Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2400
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 37.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2700
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 4.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 750
Aneroid pressure
hPa : 400
Del. quantity
cm³/1000 strokes : 56.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 56.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 62.0
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.5

Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 61.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 61.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 2.3
Shutoff solenoid
Volt : 12

MECHANICAL SHUTOFF

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5
Shutoff solenoid
Volt : 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 1.5
Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 1.5

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000S. : 1.5

IDLE DELIVERY

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000S. : 3.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,1
Tolerance mm : $\pm 0,2$

MICROSWITCH
SET

mm : 0,8..3,0
: ARF 12,0

End of test-specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.09.92
Test oil : ISO 4113

Part no. : 0 460 494 313
Pump designation : VE4/9F2150R474-1

Customer-spec. information
Customer : PSA
Motor : XUD11ATE-L/BVA

TEST BENCH REQUIREMENTS

Inlet press. bar : 0.35
Tolerance bar : 0.05

Test nozzle holde
assembly : 1 688 901 022

Opening pressure
bar : 130
Tolerance bar : 3

Test lines : 1 680 750 073

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 450

REMARKS

BEGINNING OF DELIVERY

Start of delivery blocking

Plunger stroke mm : 0,3
Tolerance mm : $\pm 0,02$
Outlet : A

INJECTION PUMP SETTING VALUES

TIMING DEVICE TRAVEL

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Setting mm : 2.5
Tolerance mm : 0.2
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Setting hPa : 5.3
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

FULL-LOAD DELIVERY WITH BOOST PRESSURE

Rated speed rpm : 1250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 61.5
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 2.5
Shutoff solenoid
Volt : 12

FULL-LOAD DELIV. WITHOUT BOOST PRESSURE

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 43.0
Tolerance
cm³/1000 strokes : 0.5
Spread
cm³/1000 strokes : 2.5
Shutoff solenoid
Volt : 12
Check tolerance
cm³/1000S. : 2.5
Check tolerance
cm³/1000S. : 2.5

HOUSING-FIXED IDLE SPRING RESIDUAL QUANTITY SETTING

Rated speed rpm : 550
Del. quantity
cm³/1000 strokes : 3.0

Tolerance
cm³/1000 strokes : 0.5
Shutoff solenoid
Volt : 12

FULL-LOAD SPEED REGULATION

Rated speed rpm : 2250
Pressure hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0
Shutoff solenoid
Volt : 12

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 75.0
Tolerance
cm³/1000 strokes : 5.0
Shutoff solenoid
Volt : 12

SET GRADUATED STARTING DELIVERY CONTROL LEVER, IDLE STOP

Rated speed rpm : 200
Del. quantity
cm³/1000 strokes : 77.0
Tolerance
cm³/1000 strokes : 1.0
Shutoff solenoid
Volt : 12

INJECTION-PUMP TEST SPECIFICATIONS

TIMING DEVICE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
SV travel mm : 5.9
Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

SV travel mm : 1.3

Tolerance mm : 0.4
Check
tolerance mm : 0.7
Shutoff solenoid
Volt : 12

SUPPLY PUMP PRESSURE CHARACTERISTIC

Rated speed rpm : 2000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 7.4
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Supply pump
pressure bar : 4.6
Tolerance hPa : 0.3
Shutoff solenoid
Volt : 12

OVERFLOW QUANTITY

Rated speed rpm : 2000
Overflow quantity
ccm/10s : 97.2
Tolerance
ccm/10s : 41.6

Check tolerance
ccm/10s : 41.6
Shutoff solenoid
Volt : 12

Rated speed rpm : 500
Overflow quantity
ccm/10s : 62.5
Tolerance
ccm/10s : 20.8

Check tolerance
ccm/10s : 20.8
Shutoff solenoid
Volt : 12

DELIVERY AND BREAKAWAY CHARACTERISTIC

Rated speed rpm : 2250
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : 3.0

Check tolerance cm ³ /1000S.	: 4.0
Shutoff solenoid Volt	: 12
Rated speed rpm	: 2400
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 37.0
Check tolerance cm ³ /1000S.	: 4.0
Shutoff solenoid Volt	: 12
Rated speed rpm	: 2700
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 8.0
Tolerance cm ³ /1000 strokes	: 3.0
Check tolerance cm ³ /1000S.	: 4.0
Shutoff solenoid Volt	: 12
Rated speed rpm	: 750
Aneroid pressure hPa	: 400
Del. quantity cm ³ /1000 strokes	: 56.5
Tolerance cm ³ /1000 strokes	: 0.5
Check tolerance cm ³ /1000S.	: 3.0
Shutoff solenoid Volt	: 12
Rated speed rpm	: 2000
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 56.5
Tolerance cm ³ /1000 strokes	: 1.5
Check tolerance cm ³ /1000S.	: 2.3
Shutoff solenoid Volt	: 12
Rated speed rpm	: 1000
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 62.0
Tolerance cm ³ /1000 strokes	: 1.5
Check tolerance cm ³ /1000S.	: 2.5

Shutoff solenoid Volt	: 12
Rated speed rpm	: 500
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 61.5
Tolerance cm ³ /1000 strokes	: 1.5
Check tolerance cm ³ /1000S.	: 2.5
Shutoff solenoid Volt	: 12
Rated speed rpm	: 1250
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 61.5
Tolerance cm ³ /1000 strokes	: 0.5
Check tolerance cm ³ /1000S.	: 2.3
Shutoff solenoid Volt	: 12

MECHANICAL SHUTOFF

Rated speed rpm	: 2000
Aneroid pressure hPa	: 1000
Del. quantity cm ³ /1000 strokes	: 1.5
Tolerance cm ³ /1000 strokes	: 1.5
Check tolerance cm ³ /1000S.	: 1.5
Shutoff solenoid Volt	: 12

ELECTR. SHUTOFF CONTROL LEVER, IDLE STOP

Rated speed rpm	: 325
Del. quantity cm ³ /1000 strokes	: 1.5
Tolerance cm ³ /1000 strokes	: 1.5
Check tolerance cm ³ /1000S.	: 1.5

FULL-LOAD STOP CONTROL LEVER

Rated speed rpm	: 325
Del. quantity cm ³ /1000 strokes	: 1.5

Tolerance
cm³/1000 strokes : 1.5
Check tolerance
cm³/1000s. : 1.5

IDLE DELIVERY

Rated speed rpm : 375
Del. quantity
cm³/1000 strokes : 8.0
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000s. : 3.0
Shutoff solenoid
Volt : 12

EXHAUST-GAS RECIRCULATION

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 25.5
Tolerance
cm³/1000 strokes : 0.5
Check tolerance
cm³/1000s. : 3.0
Shutoff solenoid
Volt : 12

START TRANSITION

Rated speed rpm : 325
Del. quantity
cm³/1000 strokes : 40.5
Tolerance
cm³/1000 strokes : 3.5
Shutoff solenoid
Volt : 12

ASSEMBLY AND ADJUSTMENT DIMENSIONS

Dimension K mm : 3,3
Tolerance mm : $\pm 0,1$
Dimension KF mm : 5,4
Tolerance mm : $\pm 0,2$
Dimension MS mm : 1,1
Tolerance mm : $\pm 0,2$

MICROSWITCH SET

mm : 0,8...3,0
: ARF 12,0

CONTROL LEVER POSITION SET

Control lever
position YA mm : 34,3...38,3

Control lever
position YB mm : 73,7...88,3

End of test-specification sheet